

Rethinking the Revolution: Competitive Telephony in a Voice over Internet Protocol Era

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As telecommunication platforms converge and new technologies emerge, there has been a call for new legislation to repeal much of the current telecommunications regulatory structure. Many proponents of change have emphasized the need for a relaxed regulatory approach to allow for innovation and investment while diminishing the prospects for regulatory arbitrage. Opponents of market-oriented approaches emphasize the need for regulatory oversight of new technologies to ensure quality of service, reliability, and access to social services. Within this debate, the uncertain regulatory status of applications such as Voice over Internet Protocol (VoIP) and other IP-enhanced services are often cited as examples of how the current regulatory structure could stymie the deployment and development of emerging technologies. While such examples are useful in advancing the cause of market-oriented approaches for emerging technologies, these arguments are seldom applied to legacy networks because of technological differences.

This Note will examine the rapid changes in the telecommunications industry due to emerging technologies, most notably VoIP. This analysis will demonstrate why the future of telephony must not lie within the regulatory framework of the past. Despite the technical differences in their transmission technologies and in the potential capabilities of both forms of telephony, many of the arguments supporting a relaxed regulatory regime for VoIP provide insight into the failures of Public Switched Telephone Network regulation. Using the arguments regarding VoIP regulation as a framework for analysis, it will be possible to see how local exchange service may benefit from the same relaxed regulatory approach advocated by some VoIP proponents. In so doing, the promise of effective intramodal local competition could be realized. Finally, this Note explains how the VoIP debate provides a framework for rethinking what regulations should be necessary under a new regulatory scheme. Such a framework would eliminate most economic regulation while maintaining some social regulation.

I. INTRODUCTION

Nearly a decade after the extensive reforms of the Federal Telecommunications Act of 1996 (FTA),¹ American consumers are

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beginning to realize dramatic changes to their telecommunications landscape. Ironically, most of these changes are not the result of the FTA, which sought, among other things, to foster competition within traditional local and long distance telephony through deregulation.² While competition in long distance markets is fairly robust, local competition lags far behind.³ Additionally, a ruling by the United States Court of Appeals for the District of Columbia⁴ that is advantageous to incumbent local exchange carriers (ILECs)⁵ makes it

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¹ Federal Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56 (codified as amended in scattered sections of 47 U.S.C.).

² See Nicholas Economides, *Telecommunications Regulation: An Introduction*, 813 PLI/PAT 453, 476-81 (2004) (examining the effect of the FTA on market strategy and structure). See also JAMES SHAW, TELECOMMUNICATIONS DEREGULATION 38-58 (1998) (providing a brief analysis of the basic structure of the 1996 Act one year after its implementation).

³ As of June 2004, competitive local exchange carriers (CLECs) provided service to only 17.8% of the traditional telephone lines; the remaining 82.2% of consumers received service from the incumbent local exchange carriers (ILECs). FEDERAL COMMUNICATIONS COMMISSION, TRENDS IN TELEPHONE SERVICE 8-5 (2005), http://www.fcc.gov/Bureaus/Common_Carrier/Reports/FCC-State_Link/IAD/trend605.pdf [hereinafter TELEPHONE TRENDS]. Conversely, in the competitive long distance market, AT&T, which once exercised monopoly power over the long distance market, has seen its residential market-share fall from 74.6% in 1995 to 31.7% in 2003. *Id.* at 9-12. These numbers should shift dramatically with the closing of the proposed merger of SBC and AT&T as well as that of Verizon and MCI. See Shawn Young & Jesse Drucker, *Telecom Mergers Limit Choices of Customers*, WALL ST. J., Feb. 4, 2005, at B1. See also Shawn Young, *Qwest Declares It Won't Contest Verizon's MCI Bid*, WALL ST. J., Sept. 28, 2005, at B4 (reporting a Qwest company statement released shortly before a Verizon shareholder meeting that it will not revive its bid for MCI even if shareholders vote to reject the merger).

⁴ U.S. Telecom Ass'n. v. Fed. Commc'n's Comm'n, 359 F.3d 554 (D.C. Cir. 2004) [hereinafter USTA II] (holding that the FCC may not grant state utility commissions the power to make unbundling decisions and that ILECs are not required to provide discounted unbundled access to CLECs absent special circumstances indicating impairment).

⁵ The FTA defines ILEC:

with respect to an area, the local exchange carrier that—(A) on February 8, 1996, provided telephone exchange service in such area; and (B)(i) on February 8, 1996,

unlikely that the state of competition in the traditional local telephone market will experience any dramatic changes in the near future, outside of the possibilities of congressional overhaul or merger activity.⁶

Although the prospects for a competitive market in residential local calling seem remote, other technological developments may provide alternatives which were not envisioned by the FTA. The internet has fundamentally shifted the way millions of Americans interact with one another and appears on the cusp of providing a challenge to traditional public switched telephone network (PSTN) usage.⁷ Internet telephony, commonly referred to as Voice over Internet Protocol (VoIP), has catapulted from near obscurity to a viable alternative that is beginning to compete with traditional telephony. The rise of VoIP, in combination with the rapidly expanding wireless telephone market, has led some scholars to argue that the competition envisioned by the FTA will likely arise from intermodal rather than intramodal competition.⁸

was deemed to be a member of the exchange carrier association pursuant to section 69.601(b) of the Commission's regulations (47 C.F.R. 69.601(b)); or (ii) is a person or entity that, on or after February 8, 1996, became a successor or assign of a member described in clause (i).

47 U.S.C. § 251(h) (2000).

⁶ See TELEPHONE TRENDS, *supra* note 3. The proposed merger of SBC and AT&T, as well as that of Verizon and MCI, could decrease competition in what is otherwise a fairly robust long distance market. See Young & Drucker, *supra* note 3. Additionally, the migration of some of AT&T's local customers to SBC may lead to even less competition within the market for residential local calling.

⁷ The growth of both internet usage and broadband connections, although somewhat lower than initial estimates, is nonetheless dramatic. The Pew Internet & American Life Project currently estimates that 68% of all adult Americans go online. Pew Internet & American Life Project, Demographics of Internet Users, http://www.pewinternet.org/trends/User_Demo_08.09.05.htm (last visited Sept. 10, 2005). As of February 2004, over 48 million American adults (roughly 24% of the population) had high speed internet connections in their homes, an increase of nearly 60% from March of 2003 when 30 million American adults had high speed internet access in their homes. JOHN B. HARRIGAN, PEW INTERNET PROJECT, PEW INTERNET PROJECT DATA MEMO 2 (April 2004), http://www.pewinternet.org/pdfs/PIP_Broadband04.DataMemo.pdf. Much of this growth may be attributed to the rise in digital subscriber line (DSL) usage which gained 14% of the broadband market share (an increase from 28% to 42% from March 2003 to February of 2004). *Id.* at 2. Despite this growth, "[t]he number of households with access to broadband technology far outpaces the number of households that actually subscribe to any form of broadband service." Enrico C. Soriano, Lee Tiedrich, Amy Levine & Emily Hancock, *A Look At Key Issues Currently Shaping Broadband Deployment and Regulation*, COMPUTER & INTERNET LAW., July 2004, at 1.

⁸ See James B. Speta, *Deregulating Telecommunications in Internet Time*, 61 WASH. & LEE L. REV. 1063, 1098, 1110 (2004) (arguing for telecommunications reform to

The feasibility of such a competitive marketplace remains uncertain. Some critics of current telephone regulation fear that states may seek to regulate VoIP by classifying it as a telephone service, thereby stunting its growth.⁹ Aware of the potential for over-regulation, the FCC preempted an order by the Minnesota Public Utilities Commission applying the state's traditional "telephone company" regulations to Vonage Holdings Corp., a provider of VoIP, noting that because users of Vonage cannot be practically located, their usage may not be considered intrastate commerce.¹⁰ Despite the FCC's *Vonage Order*, the Commission has yet to issue a final rule regarding the classification of VoIP as either a telecommunications or information service under the FTA.¹¹ On the opposite side of this question, many state regulatory commissions and consumers' rights advocates argue for an increased state role to ensure that consumer issues, as well as emergency service needs, will be sufficiently met by VoIP providers.¹²

Often lost in the debate regarding the future of VoIP is what the future of the PSTN should hold if VoIP grows as dramatically as some in the communications industry predict.¹³ This question is probably not often asked

decrease the legal and economic barriers to intermodal competition). Speta describes intermodal competition as competition between telecommunications services that use different platforms, for example the competition between cellular telephones and traditional home telephones on the PSTN. *See id.* at 1108. Intramodal competition is competition between telecommunications services that use the same platform, such as the competition between an ILEC and a CLEC.

⁹ See Michael K. Powell, *The Age of Personal Communications: "Power to the People,"* 12 COMMLAW CONCEPTS 139, 142 (2004) ("The burden should be placed squarely on government to demonstrate why regulation is needed, rather than on innovators to explain why it is not.").

¹⁰ Vonage Holdings Corp., 19 F.C.C.R. 22,404 (2004) [hereinafter *Vonage*].

¹¹ *See id.* at ¶ 2.

¹² State utility commissions filed numerous comments in response to the FCC's Notice of Proposed Rulemaking. IP-Enabled Services, 19 F.C.C.R. 4863 (2004) [hereinafter *IP-Enabled Services*].

¹³ Owners of transmission facilities such as cable companies, wireless telephone companies, and traditional telephone companies are predicting the substantial growth of VoIP. For example, AT&T planned to provide VoIP service in 100 markets in 2004 and predicted a customer enrollment of over one million within two years. Shawn Young, *AT&T to Launch Internet-Based Telephone Service*, WALL ST. J., Dec. 11, 2003, at B6. Comcast, America's largest cable provider, hopes to generate \$3.8 billion annually in revenue within five years if it reaches its target of attracting eight million subscribers to its VoIP service. Peter Grant, *Comcast Aims to Dial Up Profit—and Growth*, WALL ST. J., Jan. 11, 2005, at C1. Time Warner expected to offer VoIP service to a majority of its 10.9 million customers in twenty-seven states by the end of 2004. Mark Wigfield, *It Looks Like a Duck; Or Does It? Should Regulators Treat Internet Phone Service Like a Phone or the Internet? Its Future May Depend on the Answer*, WALL ST. J., May 24, 2004, at R8. Internet Service Providers (ISPs) also plan to enter the market. For example, America Online announced that it plans to offer VoIP service to its 22 million subscribers

because VoIP's strongest proponents, who generally seek a hands-off approach to its regulation, view VoIP as the future of *all* telephony; while state and consumer advocates, often supporters of regulation, view VoIP as performing the same function as traditional telephony and believe that it should be subject to the same regulation.¹⁴ If either rationale prevails, local exchange regulation will likely remain static. As such, the future of local competition within the PSTN, a network that millions of Americans will continue to use despite the availability of VoIP and wireless telephone options, is increasingly murky.

Amidst this uncertainty, it is possible to gain a greater understanding of the future of PSTN regulation through examining the arguments surrounding VoIP's regulation. Despite the technical differences in their transmission technologies and in the potential capabilities of both forms of telephony, many of the arguments supporting a relaxed regulatory regime for VoIP provide insight into some of the failures of PSTN regulation. Such an approach may prove particularly useful given the increasingly blurry line between PSTN and VoIP telephony as well as the common concerns that the regulation of both present.¹⁵ Noting this convergence in a 2004 VoIP hearing, Senator John McCain explained:

In many ways, VoIP is a microcosm of the broad array of telecommunications regulatory issues that have been debated since passage of the Telecommunications Act of 1996, including the role of state regulators, the legal classification of services, universal service, access charges, emergency services and access by people with disabilities.¹⁶

and then to expand its service offerings to non-subscribers. Julia Angwin, Christopher Rhoads & Scott Thurm, *AOL to Launch Net Phone Service, Giving VoIP a Mainstream Name*, WALL ST. J., Mar. 9, 2005, at A3. Current users of America Online, as well as users of its Instant Messenger service, may also use VoIP to chat with other users, regardless of location. One analyst predicts that the market for VoIP, which was estimated at \$517 million in 2004, will be \$1.92 billion in 2005 and will explode to \$9.5 billion by 2008. Roger Cheng, *Battle Is on for Web-Calling Market*, WALL ST. J., Oct. 20, 2004, at B2C.

¹⁴ Explaining the rationale for increased state regulation, James Bradford Ramsey, general counsel of the National Association of Regulatory Utility Commissioners (NARUC), notes that if VoIP becomes a significant substitute for traditional telephony, "consumers will want to be able to call state regulators" to complain about their service. Wigfield, *supra* note 13.

¹⁵ Some PSTN-based calls are actually routed over the internet without the customer being aware. See IP-Enabled Services, *supra* note 12, at ¶ 10.

¹⁶ *Voice Over Internet Protocol (VOIP): Hearing Before the S. Comm. on Commerce, Science & Transportation*, 108th Cong. (2004) (statement of Sen. John McCain, Chairman, S. Comm. on Commerce, Science & Transportation).

Adapting PSTN regulation through the lens of the VoIP debate will allow for market- and innovation-oriented solutions that move beyond the current regime of fifty-one separate,¹⁷ and sometimes contradictory, regulatory schemes. Such adaptations may prove especially important if the market for VoIP is less competitive than its proponents anticipate.

This Note will examine the rapid changes in the telecommunications industry due to emerging technologies, most notably VoIP. This analysis will demonstrate why the future of telephony must not lie within the regulatory framework of the past. Using the arguments regarding VoIP regulation as a framework for analysis it will be possible to see how traditional telephony may benefit from a more relaxed regulatory approach. Rather than placing VoIP and other IP-enhanced services within the FTA, it is time for a new act addressing the new realities of the telecommunications industry.¹⁸ Such an act should dramatically reduce the role that state utility commissions play in PSTN regulation while addressing concerns regarding universal service as well as access to emergency services. Reducing the regulatory role of individual states will allow for innovation in all areas of telephony and remove VoIP's regulatory advantage without sacrificing innovation and investment.

Part II of this Note will provide background concerning the technical aspects of both VoIP and the PSTN. Part III will trace the development of the PSTN from its beginnings through the development of an industry-wide monopoly, concluding with the successes and failures of the more recent era of deregulation by the FTA. Part IV will examine changes to America's

¹⁷ This total includes fifty state utility commissions and the FCC.

¹⁸ Such a suggestion has been gaining momentum amongst regional Bells as well as high ranking members of Congress. See Stephen Labaton, *Telecom: Eight-Year-Old Basic Law May Be Outdated Already*, N.Y. TIMES, Dec. 6, 2004, at C13 (noting a Congressional and industry desire to revamp the FTA, despite a lack of consensus of exactly what reform should entail). On September 15, 2005, the House of Representatives Energy and Commerce Committee released draft legislation updating the FTA by providing new laws governing broadband services including VoIP as well as broadband based video services. H. Comm. on Energy & Commerce, Staff Discussion Draft (Sept. 15, 2005), http://energycommerce.house.gov/108/News/09152005_staff_disc.pdf. The Progress and Freedom Foundation (PFF), a self-described, "market-oriented think tank that studies the digital revolution and its implications for public policy," launched a bipartisan effort to draft a model communications act named the "Digital Age Communications Act" (DACA) on February 1, 2005. Copies of the working papers are available at <http://www.pff.org/daca/>. The PFF has called for a new regulatory regime similar to the antitrust model of regulation. A full version of the proposed legislation is available at <http://www.pff.org/issues-pubs/other/050617regframework.pdf>. See also Anne Marie Squeo, *Phone Companies Push Telecom Overhaul*, WALL ST. J., Jan. 18, 2005, at A4 (noting a telecommunications industry desire to revamp the FTA).

telecommunications industry resulting from rapid technological development and the merging of voice, video, and data transmission into one platform. Finally, Part V will argue for regulatory parity amongst older and emerging technologies. This will be accomplished by addressing the arguments surrounding the regulatory status of VoIP and asking why these arguments should not apply to traditional telephony. Through this discussion, it will be possible to see that the failings of the current regulatory approach apply not only to emerging technologies that erode regulatory classifications, but also to the very technologies that have been regulated through this approach for over seventy years.

II. BACKGROUND

For much of its history, the mechanics of telephone service in the United States have remained relatively stagnant.¹⁹ Traditional telephony is routed over the PSTN which connects individual home units to a local exchange carrier (LEC) that provides the major switch servicing for a large geographic area.²⁰ A local call is routed through the LEC to another telephone within the exchange.²¹ For long distance, calls are routed through an interexchange carrier (IXC) which routes traffic from one exchange to another.²² The actual transmission of PSTN telephony is therefore direct and hierarchical, meaning that the passage of a call over copper wire, microwave, or fiber optic cable may be traced from end to end, with the signal actually traveling over a specific route between participants in the conversation.²³

Additionally, voice is transmitted over telephone wires (or through the air in the case of microwave) at the speed of light as an analog signal that is then decoded by the telephone.²⁴ During a telephone conversation, a channel of fixed bandwidth remains open allowing individuals to speak with one another,²⁵ and no other content may travel on the line.²⁶ If there is a break in

¹⁹ For a discussion of the evolution of the PSTN as well as a description of the telecommunications networks of the future see, Douglas Sicker, *The End of Federalism in Telecommunications Regulations?*, 3 NW. J. TECH. & INTELL. PROP. 130, 133–53 (2005).

²⁰ STUART MINOR BENJAMIN, DOUGLAS GARY LICHTMAN & HOWARD A. SHELANSKI, *TELECOMMUNICATIONS LAW AND POLICY* 614 (2d ed. 2001).

²¹ *Id.*

²² *Id.*

²³ *Id.*

²⁴ *Id.* at 26–27.

²⁵ See Economides, *supra* note 2, at 493.

²⁶ Robert S. Metzger & Benjamin P. Broderick, *Communications Convergence*, *COMPUTER & INTERNET LAW.*, Oct. 2001, at 1.

this channel, then the signal will have no alternative route. This ability for end-to-end analysis of the complete analog signal allows for a separation of calls that are interstate from those that are exclusively intrastate.

Although VoIP may serve the same function as the PSTN and, through the use of adaptors, is compatible with it, VoIP's method of voice transmission differs dramatically. As its name indicates, VoIP transmits voice over the internet in the form of internet protocol. Its transmission is essentially no different from other forms of information transmitted over the internet such as instant messages, video, e-mail, or information accessed on the world wide web. Rather than transmit information in complete analog form, VoIP transfers bits of voice in packets which are individually addressed and sent over physical networks that may be composed of copper, fiber, coaxial cable, or wireless facilities.²⁷ VoIP users may use a microphone connected to their computer, a VoIP-specific telephone,²⁸ or an adaptor that allows for the use of a conventional telephone.²⁹ Unlike the

²⁷ IP-Enabled Services, *supra* note 12, at ¶ 8.

²⁸ Both Sprint PCS and Verizon's "push to talk" wireless telephones utilize VoIP to transmit voice between users rather than the PSTN. *Id.* at ¶ 14.

²⁹ VoIP does not necessarily need to connect to the PSTN. The earliest VoIP applications did not do so and such connection is available only through the use of an adaptor. The advantage of connectivity to the PSTN is that it enables a VoIP user to contact or be contacted by any person on the switched network. There are free services available, such as pulver.com's Free World Dialup (FWD), which is already the subject of an FCC order declaring it an information service and not subject to legacy regulations. pulver.com's Free World Dialup is Neither Telecommunications Nor a Telecommunications Service, 19 F.C.C.R. 3307 (2004). FWD is a free service that allows users to speak with other members of the service through VoIP in the same manner as an instant message. Although FWD is the subject of an FCC order, the most widely used PC-to-PC VoIP program is Skype. Skype is a free program that allows users to speak to one another using a microphone, headset, or conventional telephone. Ethan Todras-Whitehill, *When A Stranger Calls From Afar or Nearby: An Internet Phone Service Creates A Network of Users Willing to Advise, Tutor or Simply Chat with All Comers*, N.Y. TIMES, Mar. 24, 2005, at G1. Skype users may also place calls to traditional telephone lines worldwide at low rates. See Seth Schiesel, *The Future Calls, and Mom Says Call Back*, N.Y. TIMES, May 4, 2005, at G3. Skype also offers a voice mail service and allows users to set up a telephone number so that conventional telephone users may call Skype users. James Fallows, *TECHNO FILES: An Update on Stuff That's Cool (Like Google's Photo Maps)*, N.Y. TIMES, Apr. 17, 2005, § 3:5. As of August 2005, Skype has fifty-one million users. Amanda Bower & Laura A. Locke, *Catching Up to Stay Ahead*, TIME, Sept. 5, 2005, at 53. Skype is so popular and disruptive to other forms of telephony in Europe that Vodafone's German cell phone division has stated it will cease connecting calls placed from Skype to its customers in July 2007. Ben Charny, *VoIP Backlash In Germany?*, NEWS.COM, July 13, 2005, http://news.com.com/VoIP+backlash+in+Germany/2100-7352_3-5786976.html. Skype was acquired by EBay for \$2.6 billion in September 2005. Mylene Mangalindan, *EBay*

hierarchical structure of the PSTN, the transmission of data over the internet is horizontal, meaning that data transmission does not follow a “permanent or exclusive” path from its sender to its recipient.³⁰ Routers read packet addresses individually and decide the optimal path of transmission for each packet.³¹ If part of a network is not functioning properly, the routers will seek an alternative path for the packets to travel. As such, there is no dedicated switch for a given conversation and packets from the same conversation may take different routes despite the constancy of all participants to the conversation.³² Upon receipt, the packets of information are reassembled by the computers or adaptors of the participants in the conversation.³³ Through this transformation, VoIP can carry significantly more information in a more efficient manner than analog transmission over the PSTN. This efficiency translates into lower costs for providers and users,³⁴ as well as enhanced services throughout the conversation.

As an internet application, VoIP can offer more features than traditional telephony. The use of packets allows for enhanced conferencing capabilities beyond three-way calling. Users of VoIP may engage in conferencing in more or less the same way in which they engage in online chatting. While teleconferencing is currently available through the PSTN, such conferences

Draws Skype Skeptics on Wall Street, WALL ST. J., Oct. 3, 2005, at C1. America Online's Instant Messenger offers VoIP as well as video communication between users, as does Apple's iChat software. David Pogue, *Google Gets Better. What's Up With That?*, N.Y. TIMES, Aug. 25, 2005, at C1. Seeking to break into the VoIP market, Yahoo purchased a closely held VoIP company and Google has released Google Talk. Kevin J. Delaney, *Yahoo Buys Firm That Offers Calls From PC to Phone*, WALL ST. J., Jun. 15, 2005, at B5; Mylene Mangalindan & Christopher Rhoads, *Google to Introduce Instant Messaging*, WALL ST. J., Aug. 24, 2005, at B3. Also, Microsoft's X-Box Live allows video game players to speak with other players (participating in the same game) through VoIP. Powell, *supra* note 9, at 141. Such services resemble the early exclusive switched networks that gave rise to calls for PSTN monopoly to create connections between exchanges.

³⁰ IP-Enabled Services, *supra* note 12, at ¶ 8.

³¹ *Id.*

³² *Id.*

³³ Wigfield, *supra* note 13.

³⁴ Vonage, currently the largest provider of VoIP service, sells unlimited local and long distance service for a monthly charge of \$25, nearly one-half the price of comparable PSTN service. Vonage is expected to lose its status as America's leading VoIP provider as more cable and television companies enter the market. While some of these companies plan to compete for VoIP through price, others plan to use bundling, name recognition, and additional services to lure customers to packages that are only a modest discount from PSTN prices. Ben Hunt, Comment & Analysis, *Improved Technology Means that the Race to Provide Customers With a Single Package of Voice, Video and Data Services Is Hotting Up*, Write Paul Taylor and Aline Van Duyn, FIN. TIMES, Jan. 12, 2005, at 15.

require operator assistance. In contrast, a VoIP user may arrange a conference call with the click of a mouse.³⁵ VoIP also provides advanced call forwarding techniques. Rather than routing a call on the switched network to a single other number, VoIP has the capacity for multiple numbers to be tried while forwarding a call.³⁶ Voice messaging through VoIP will also be more enhanced than what is currently available through the PSTN. VoIP users may receive their messages through e-mail in the form of a .wav file.³⁷ Through this feature, VoIP users will have nearly instantaneous access to their messages without the need to call and check. Finally, screening of calls also differs with VoIP because users may set parameters for which calls will be allowed to go through at a particular time and which will be sent directly to voice mail.³⁸ The extent to which these services will be desired by consumers remains to be seen; nonetheless, their availability provides VoIP with a competitive advantage.

Resulting from the horizontal organization of internet protocol, the traditional fixed location of a subscriber line disappears. Instead of needing to be at home to use one's "home" telephone, a VoIP subscriber simply needs a broadband internet connection (and a receiver of some kind) to place calls from her "home" number.³⁹ This process is equivalent to accessing any internet service such as world wide web-based e-mail, digital media, or instant messaging. Also, by routing calls through the internet rather than the PSTN, subscribers may choose their area code because such numbers are not needed for PSTN routing purposes.⁴⁰ Individuals living away from friends and relatives as well as businesses operating out of a particular region could choose an exchange to limit long distance charges, simulate presence in a particular market, or even create virtual call centers.⁴¹

VoIP's portability makes traditional end-to-end analysis untenable. If a caller can choose her area code and be in any location with a broadband connection when placing a call, it becomes much more difficult to separate interstate from intrastate conversations. Even if a caller places a "local" call

³⁵ Peter Grant, *Ready for Prime Time*, WALL ST. J., Jan. 12, 2004, at R7.

³⁶ *See id.*

³⁷ *See id.* *See generally* NEWTON'S TELECOM DICTIONARY 880 (19th ed. 2003) ("A Wave File is a Microsoft Windows proprietary format for encoding sound.").

³⁸ In terms of practicality, this feature is more likely to appeal to business rather than residential customers. Business customers may use this feature to prioritize certain calls to a call center over others.

³⁹ Grant, *supra* note 35.

⁴⁰ Wigfield, *supra* note 13.

⁴¹ *See id.* For example, JetBlue Airways, a discount airline, has all of its reservations agents work from home using VoIP telephones. Grant, *supra* note 35.

from her home, the horizontal structure of internet protocol could route packets from the conversation anywhere in the world.⁴² This applies to users of the PSTN as well, because a telephone call to a person with the same area code could actually be an interstate or even international call. Without a switched connection, the line between interstate and intrastate becomes tenuous. Even if such tracking were possible, the resources that VoIP providers would have to devote to accounting for packet traffic would likely be better spent on development geared toward satisfying the dictates of the market rather than on a state regulator.

The technological differences between VoIP and traditional telephony leave VoIP with a competitive advantage over calls routed over the PSTN.⁴³ To combat this advantage, providers of PSTN service will likely need to adapt to the demands of a more competitive marketplace. Such adaptation is likely to come in the form of infrastructure upgrades moving from the copper wire of the PSTN to fiber optic networks.⁴⁴ If such massive technological investments will be necessary, they could sound the death knell for CLEC's who will be unable to compete with ILECs and already possess limited bargaining power to negotiate advantageous lease rates for unbundled network elements (UNEs).⁴⁵ Indeed, prior to its agreement to merge with SBC, AT&T stopped soliciting new local customers after a federal court held that ILECs were not required to offer subsidized rates for leasing network elements.⁴⁶

⁴² The FCC used this logic in its *Vonage Order*. *Vonage*, *supra* note 10, at ¶¶ 24–25.

⁴³ The advantages of VoIP are most apparent within the market for business telephone services. Anticipating the widespread use of VoIP rather than private branch exchanges (PBXs), producers of business telephone systems have focused much of their attention on VoIP telephones. The technology consulting firm Yankee Group estimated that by the end of 2004 nearly 20% of new phones shipped to U.S. businesses would use VoIP. Grant, *supra* note 35. It is believed that this percentage will increase to over 50% by 2007, and eventually virtually all phones shipped to U.S. businesses will use VoIP. *Id.* According to one estimate, shipments of Enterprise VoIP lines passed the 50% threshold in the third quarter of 2004. David Yedwab, *VoIP Enterprise Shipments Crack 50%*, TELEPHONY ONLINE, Jan. 19, 2005, http://telephonyonline.com/news/voip_enterprise_shipments/index.html.

⁴⁴ For a discussion of efforts by ILECs to improve their service offerings in response to potential VoIP competition from cable companies, see *infra* Part IV.A.

⁴⁵ A UNE may be defined as, “[a] part (‘element’) of a telephone network, such as a switch or customer loop, that the 1996 Act [FTA] requires ILECs to lease to CLECs at cost-based rates.” BENJAMIN, LICHTMAN & SHELANSKI, *supra* note 20, at 1056.

⁴⁶ Mark D. Schneider, Marc A. Goldman & Kathleen R. Hartnett, *The USTA Decisions and the Rise and Fall of Telephone Competition*, COMM. LAW., Summer 2004, at 1, 23.

Despite the advantages that ILECs possess over CLECs, PSTN service will be further hampered through the current scheme of telephone regulation. As long as VoIP's primary purpose is to serve as a platform for telephony, then a truly competitive market should mandate that both services be regulated in a similar fashion. Rather than traveling down the current path of placing new technologies into old regulatory classifications required by the FTA, it is a time for a new telecommunications act that emphasizes competition and limits state regulatory authority. In drafting a new act, Congress should look to the successes and failures of the FTA, emerging technologies, and the arguments surrounding the regulation of VoIP to predict how to best balance public goods with the needs of technological investment and innovation.

III. THE QUEST FOR PSTN COMPETITION

The current state of telephony is the product of a history filled with regulation, and more recently, deregulation. To argue for changes to the current state of telephone regulation, it is first necessary to understand how previous views of telephony have shaped the regulatory treatment of the PSTN. While examining telephony's past, one should consider that the technology of the telephone does not necessarily determine the competitive market in which telephone service must exist. The history of telephony is filled with instances in which more foresight by either competing operators or regulators could have yielded a market quite different than the AT&T monopoly that emerged. Once one develops an understanding of telephony's past and present, it will be possible to look toward the future possibilities of competitive telephony.

A. A Condensed History of Telephone Regulation

Despite a tradition of monopoly and regulation, the most nascent stages of telephone development were marked by a vibrant and competitive market. The design for the telephone was first patented by Alexander Graham Bell in 1876 and telephones began being installed for commercial purposes in 1877.⁴⁷ Notwithstanding the billions of dollars that Bell's invention would

⁴⁷ Although Bell is today considered the inventor of the telephone, there was also significant work done for Western Electric (a subsidiary of Western Union) by Elisha Gray. Both Gray and Bell researched telegraphs and determined that it would be possible to transmit voice over wire. Interestingly, both Gray and Bell filed patents for their inventions on February 17, 1876. It has been alleged but never proven that Bell, the first of the two to file, changed his application after Gray's filing because an employee at the patent office provided him with a copy of Gray's application. Later litigation upheld

ultimately generate, Bell and his investors lacked sufficient capital to launch a large telephone network.⁴⁸ As a result, this small group formed the Bell Telephone Company—the company that would eventually become the American Telephone and Telegraph Company (AT&T).⁴⁹ The Bell Telephone Company focused on building telephone equipment to be leased to franchisees who agreed to install the wires connecting their customers to one another.⁵⁰

The Bell Company faced early competition from Western Union which also held patents on telephone technology.⁵¹ During this brief period of competition, Bell nearly went bankrupt as both firms competed for new customers by improving their respective service offerings.⁵² This competition was relatively short-lived because Western Union cared more about maintaining its dominance in the telegraph business than competing in the new telephone market.⁵³ After Bell sued Western Union for patent infringement, Western Union decided to leave the telephone business altogether and agreed upon a settlement which gave Bell all of Western Union's network (56,000 telephones in fifty-five cities), its telephone patents, and forbade Western Union from re-entering the telephone market for seventeen years.⁵⁴ In exchange, Bell agreed not to enter the telegraph

Bell's 1876 patent and during its lifetime Bell's patent was upheld over 600 times. SUSAN E. MCMASTER, *THE TELECOMMUNICATIONS INDUSTRY* 5–7 (2002).

⁴⁸ *Id.* at 9.

⁴⁹ KEVIN G. WILSON, *DEREGULATING TELECOMMUNICATIONS* 14 (2000). Wilson describes how the need for capital shaped Bell's corporate structure:

As the enterprise grew, it generated a number of corporate forms, each one dictated by the need to increase the capitalization of the company. In quick succession corporate entities were created and transformed. The precursor companies to the American Telephone and Telegraph Company (AT&T), the future telecommunications monolith, were the following: Bell Patent Association (1875), Bell Telephone Company (Massachusetts association) (1877), New England Telephone Company (1878), Bell Telephone Company (1878), National Bell Telephone Company (1879), American Bell Telephone Company (1880), and American Telephone & Telegraph Company (as a subsidiary of the American Bell Telephone Company) (1885). In the short period between the creation of the Bell Telephone Corporation in 1878 and the creation of the American Bell Telephone Company in 1880, capitalization was increased from \$450,000 to \$7,350,000. In addition to stock offerings, expansion was financed through the issuance of bonds and debentures.

Id. (citations omitted).

⁵⁰ MCMASTER, *supra* note 47, at 9.

⁵¹ *See id.* at 10–12.

⁵² *Id.* at 11.

⁵³ *Id.* at 12.

⁵⁴ *Id.*

business (which was more lucrative at that time), to transfer all telegraph messages Bell received to Western Union unless a customer specified otherwise, and payment of 20% of all telephone rental fees received by Bell during the seventeen-year period (approximately seven million dollars).⁵⁵ This agreement gave Bell a virtual monopoly until its patents expired in 1892 and 1893.⁵⁶

After the expiration of Bell's patents, the market for telephony became very competitive because 451 of 1002 cities in the United States with telephone service had two or more telephone companies.⁵⁷ During this period, Bell was close to bankruptcy on multiple occasions and saw revenues steeply decline.⁵⁸ Competition continued to expand and a 1907 telephone census indicated that the "independents" shared nearly half the market with Bell.⁵⁹ Between 1894 and 1907, average telephone rates fell nearly 50% and Bell experienced an 80% decline in average return on investment.⁶⁰ The Bell companies responded to this increased competition with a refusal to interconnect with non-affiliated networks, thereby denying "independent" providers access to long distance service.⁶¹ Nonetheless, for a brief period, it appeared possible that the benefits of the competitive market could be enjoyed within the telephone industry.⁶²

Bell's innovations in long distance technology and the shrewd business practices of its president, Theodore Vail, saved Bell from declining

⁵⁵ *Id.* The seven million dollar payment, even when adjusted for inflation, pales in comparison to the eventual monopoly profits enjoyed by AT&T. AT&T eventually acquired Western Union in 1910 for \$30 million. PETER W. HUBER, MICHAEL K. KELLOGG & JOHN THORNE, *FEDERAL TELECOMMUNICATIONS LAW* 12 (2d ed. 1999).

⁵⁶ WILSON, *supra* note 49, at 15.

⁵⁷ HUBER, KELLOGG & THORNE, *supra* note 55, at 12. *See also* WILSON, *supra* note 49, at 16 (describing the increased competition of this time, "In 1893 there were 266,431 telephone 'stations' (subscriber lines) in operation; all of them were owned by the Bell companies. Ten years later the Bell System had burgeoned to 1,684,877 telephones, but the total of all independents had nearly matched this expansion with 1,244,936 telephones."); MCMASTER, *supra* note 47, at 31 ("[P]rices declined greatly during the period from 1894 through 1909. AT&T's prices decreased by 47.5 percent for businesses and by 64.9 percent for residential customers in competitive areas. . . . In noncompetitive areas, business rates decreased by 47.1 percent, residential rates by 57.6 percent.").

⁵⁸ WILSON, *supra* note 49, at 16 ("In 1895 the average yearly revenue per station for Bell was \$88. By 1907 this had fallen to \$43.").

⁵⁹ HUBER, KELLOGG & THORNE, *supra* note 55, at 12.

⁶⁰ *Id.*

⁶¹ WILSON, *supra* note 49, at 16.

⁶² MCMASTER, *supra* note 47, at 31.

revenues.⁶³ The firm only allowed Bell affiliates to use its long distance technology and he refused to sell equipment or to interconnect with non-Bell-affiliated telephone companies.⁶⁴ As Bell grew larger, its incentive to interconnect with smaller networks decreased, causing consumers to place a higher value on the use of Bell as a telephone provider rather than the independent providers.⁶⁵ Bell's refusal to interconnect led businesses in the early part of the twentieth century to use two or more phone lines to access customers on different networks.⁶⁶ Vail soon argued for the creation of a central exchange, through which all users of the system could speak with one another.⁶⁷ This, it was argued, would keep costs low through the elimination of redundant networks.⁶⁸ It was from this logic that arguments for the PSTN as a natural monopoly developed. Indeed, remnants of this argument are present to this day in discussions of the last mile.⁶⁹

⁶³ See *id.* at 40; WILSON, *supra* note 49, at 16–17. See also McMASTER, *supra* note 47, at 17–19, 24–25.

⁶⁴ HUBER, KELLOGG & THORNE, *supra* note 55, at 12.

⁶⁵ In economic parlance this phenomenon is known as a “network effect.” “Network effects” have been described as “a group of theories clustered around the question whether and to what extent standard economic theory must be altered in cases in which ‘the utility that a user derives from consumption of a good increases with the number of other agents consuming the good.’” Mark A. Lemley & David McGowan, *Legal Implications of Network Economic Effects*, 86 CAL. L. REV. 479, 483 (1998) (citing Michael L. Katz & Carl Shapiro, *Network Externalities, Competition, and Compatibility*, 75 AM. ECON. REV. 424, 424 (1985)). Nicholas Economides notes: “Although not clearly articulated in network economics terms, the issue facing the independents and AT&T was clearly a fundamental issue in network economics.” Economides, *supra* note 2, at 464.

⁶⁶ See generally BENJAMIN, LICHTMAN & SHELANSKI, *supra* note 20, at 606.

⁶⁷ See WILSON, *supra* note 49, at 18. Vail was fond of the phrase, “[o]ne system, one policy, universal service,” meaning that a national telephone network would work best if it was administered by one firm that would submit to government regulation. *Id.* It is important to note that Vail's phrase includes the term “universal service.” It has been argued that monopoly is necessary for the furnishing of universal service because competitive firms would otherwise fail to operate in less populated rural areas. *Id.*

⁶⁸ *Id.* See also BENJAMIN, LICHTMAN & SHELANSKI, *supra* note 20, at 606.

⁶⁹ The last mile may be defined as “an imprecise term that typically means the link—usually twisted pair—between an end-user and the telephone company central office—local, long distance or Internet . . . [I]t doesn't mean a ‘mile,’ since that ‘mile’ could be less than a mile or several miles.” NEWTON'S TELECOM DICTIONARY, *supra* note 37, at 456. The last mile is often considered a natural monopoly because it theoretically may be most efficiently provided by only one firm. As multiple firms enter the market, the average cost per consumer becomes higher than if a single firm were to provide the service because each competitor has fewer customers to share the expense of using the network. BENJAMIN, LICHTMAN & SHELANSKI, *supra* note 20, at 374–78.

Rather than focusing on internal expansion or licensing local affiliates, in 1907 AT&T began to acquire local operators.⁷⁰ Around this time, AT&T also began to sell equipment to non-affiliated local operators, marking a shift in firm policy that was motivated by a desire to decrease transaction costs on later acquisitions of local operators.⁷¹ AT&T's acquisitions eventually drew government suspicion, and in 1913 the firm reached a settlement with the government known as the Kingsbury Commitment of 1913.⁷² Although praised at the time because the agreement required interconnection with the "independents," this agreement actually reduced telephone competition and strengthened AT&T's market position by giving it a disproportionate share of the fees related to interconnection.⁷³ The passage of the Willis-Graham Act in 1921 exempted the telephone industry from antitrust review of acquisitions if the merger was approved by the Interstate Commerce Commission (ICC).⁷⁴ AT&T used this Act to its benefit and between 1921 and 1934 received ICC approval for 271 of 274 proposed mergers.⁷⁵ By the end of the 1920s, AT&T held 80% of the national telephony market—a monopoly position that it would occupy for the next fifty years.⁷⁶

As a provider to a large majority of the U.S. telephone market, AT&T submitted to state regulation in 1920.⁷⁷ With the passage of the 1934 Communications Act, which created the FCC, AT&T began to be regulated by the federal government as well.⁷⁸ The 1934 Act provided the framework for telephone regulation that largely exists to this day. Even when changes to the regulatory structure were introduced by the FTA, the FTA's approach to regulatory classification was virtually identical to that of the 1934 Act.⁷⁹

⁷⁰ WILSON, *supra* note 49, at 16.

⁷¹ *Id.* AT&T's subsidiary, Western Electric, was the exclusive producer of equipment to be used on the AT&T network. MCMASTER, *supra* note 47, at 19–20.

⁷² See HUBER, KELLOGG & THORNE, *supra* note 55, at 16–18; WILSON, *supra* note 49, at 72–73; MCMASTER, *supra* note 47, at 37–38.

⁷³ See HUBER, KELLOGG & THORNE, *supra* note 55, at 17; WILSON, *supra* note 49, at 17; MCMASTER, *supra* note 47, at 38.

⁷⁴ MCMASTER, *supra* note 47, at 52.

⁷⁵ *Id.*

⁷⁶ *Id.*

⁷⁷ Economides, *supra* note 2, at 469.

⁷⁸ Prior to the 1934 Communications Act, the telephone industry was under the jurisdiction of the Interstate Commerce Commission (ICC). Nonetheless, the ICC focused much of its attention on the railroad industry. With the creation of the FCC, the telephone industry received more extensive regulation. See MCMASTER, *supra* note 47, at 49.

⁷⁹ The approach to regulation is often referred to as the "silo" approach because the Act divides telecommunications into regimented areas. Depending upon the regulatory classification of a particular area, a service receives varying degrees of regulatory

Essential to the 1934 Act's approach was the notion of a telephone provider as a common carrier.⁸⁰ As such, the 1934 Act created the FCC, "For the purpose of regulating interstate and foreign commerce by wire . . . so as to make available, so far as possible, to all people of the United States a rapid, efficient, Nation-wide, and world-wide wire . . . communication service with adequate facilities at reasonable charges."⁸¹ To this end, the FCC began establishing rules for the provision of telephone service.

AT&T maintained its monopoly status virtually unchallenged until the government filed a lawsuit against AT&T and Western Electric alleging that the two entities violated the Sherman Act by monopolizing and conspiring to restrain trade in both telephone service and equipment markets.⁸² The result of this action was a consent decree which provided an injunction precluding AT&T from entering into any business other than providing common carrier services, allowed Western Electric only to produce equipment for the Bell System, and required the licensing of AT&T and Western Electric patents to any applicant willing to pay appropriate royalties.⁸³ Despite the government's efforts to combat AT&T's monopoly, the FCC and state utility commissions continued to provide protection to local monopolies (mostly controlled by AT&T)—preventing competition while also using cross-subsidies to help give the telephone the ubiquitous status it enjoys to this day.⁸⁴

Technological advances allowed competition to slowly re-enter the telephone market. This competition emerged in the long distance market

oversight. See Rob Frieden, *The FCC's Name Game: How Shifting Regulatory Classifications Affect Competition*, 19 BERKELEY TECH. L.J. 1275, 1277–78 (2004) (discussing the effect of regulatory classifications within the FTA and their impact on competition).

⁸⁰ Telephone companies had previously been treated as common carriers and were under the jurisdiction of the ICC. WILSON, *supra* note 49, 16–18.

⁸¹ Communications Act of 1934, 48 Stat. 1064 § 1 (codified as amended at 47 U.S.C. § 151 (2000)). This particular part of § 1 of the Communications Act of 1934 was amended in 1996 to include the words "without discrimination on the basis of race, color, religion, national origin, or sex." 47 U.S.C. § 151 (2000).

⁸² *U.S. v. Am. Tel. & Tel. Co.*, 552 F. Supp. 131, 135–36 (D.D.C. 1982) [hereinafter AT&T].

⁸³ The terms of this consent decree had the long-term effect of preventing AT&T from entering the computer market. When one considers that AT&T-controlled laboratories created the transistor, an essential component to the computer, the long-term effect of this decree may have been beyond that imagined by both parties to the dispute. See generally Christopher Rhoads, *Missed Calls: AT&T Inventions Fueled Tech Boom, And Its Own Fall*, WALL ST. J., Feb. 2, 2005, at A1 (noting that many of the inventions which fueled the technology boom, including the transistor, were created by Bell Labs, but could not be used by AT&T).

⁸⁴ MCMMASTER, *supra* note 47, at 87.

where microwave technology allowed for the transportation of long distance traffic over the air rather than through wires.⁸⁵ This development helped pave the way for the break up of AT&T's monopoly in 1982.⁸⁶

The AT&T monopoly ended as a result of a settlement between AT&T and the Justice Department to an antitrust case originally filed in 1974.⁸⁷ The government alleged that:

- (i) AT&T's exclusive relationship with Western Electric was illegal; (ii) AT&T monopolized the long distance service market; (iii) AT&T refused to interconnect telecommunications competitors as well as customers' premises equipment, thus being liable for a 'refusal to deal'; (iv) AT&T used various discriminatory practices that raised the costs of competitors; (v) AT&T abused the regulatory process and did not provide complete information to regulators; [and] (vi) AT&T set prices to exclude competitors, including practicing predatory pricing.⁸⁸

The Modified Final Judgment (MFJ) ordered the divestment of AT&T from its twenty-two operating companies that provided local telephone service.⁸⁹ This created seven independent Regional Bell Operating Companies (RBOCs) in place of the previously AT&T-controlled Bell Operating Companies.⁹⁰ Each RBOC maintained monopoly control over the local loop within its respective region. As a result, each RBOC was forbidden from entering the long distance market, providing information services, or manufacturing equipment used on the telephone system (other than CPEs).⁹¹ The MFJ allowed AT&T to re-enter the computer market as

⁸⁵ James Speta cites long distance competition resulting from microwave transmission as a form of intermodal competition that allowed for previously monopolized networks to be opened up. Using this example, as well as examples from the deregulation of railroads, he argues for a new communications law that allows for decreased legal and economic barriers for intermodal competitors—such as VoIP and cell phones—to the PSTN. *See* Speta, *supra* note 8, at 1108–46.

⁸⁶ *See* AT&T, *supra* note 82.

⁸⁷ *Id.* at 139. For an extensive narrative discussion detailing the breakup of AT&T's monopoly, *see* STEVE COLL, *THE DEAL OF THE CENTURY* (1986). For a brief excerpt describing AT&T's eventual demise, *see* Leslie Cauley, *Book Charts AT&T's Long, Slippery Slope*, *USA TODAY*, Aug. 8, 2005, at 4B.

⁸⁸ Economides, *supra* note 2, at 470.

⁸⁹ AT&T, *supra* note 82, at 141.

⁹⁰ The seven Regional Operating Companies were Pacific Telesis, US West, Southwestern Bell, Ameritech, Nynex, Bell Atlantic, and Bell South. BENJAMIN, LICHTMAN & SHELANSKI, *supra* note 20, at 673.

⁹¹ CPEs are defined as, "Customer Provided Equipment, or Customer Premises Equipment. Originally it referred to equipment on the customer's premises which had

well as maintain its status within the market for CPEs and long distance.⁹² The only restriction placed on AT&T was a seven-year ban on entering the electronic publishing market.⁹³ The logic of the MFJ indicated that, divested from serving the local market, AT&T could do little harm to virtually all other competitive markets.

In the years following the MFJ, the long distance market gradually became more competitive. AT&T's market share of total revenue fell from 90.1% in 1984 to 51.8% in 1995.⁹⁴ During this time new technologies emerged, allowing for telephone providers to offer new products including various types of wireless services.⁹⁵ This combination, along with the elimination of cross-subsidies, reduced prices within the long distance market.⁹⁶ By the end of 1995 it was clear that a competitive market in telephony was indeed possible.

B. *The Telecommunications Act of 1996*

Influenced by the perceived successes of deregulation in other industries,⁹⁷ Congress sought to spur competition in telephony through deregulation. After years of debate and compromise, Congress passed the Telecommunications Act of 1996 (FTA).⁹⁸ The FTA amended the 1934 Communications Act, and in doing so maintained the earlier system of regulation through classification. The stated purpose of the FTA was, "To promote competition and reduce regulation in order to secure lower prices and higher quality services for American telecommunications consumers and encourage the rapid deployment of new telecommunications technologies."⁹⁹ Given that the market for long distance service had become increasingly

been bought from a vendor who was not the local phone company. Now it simply refers to telephone equipment—key systems, PBXs, answering machines, etc.—which reside [sic] on the customer's premises." NEWTON'S TELECOM DICTIONARY, *supra* note 37, at 207.

⁹² AT&T, *supra* note 82, at 185.

⁹³ *Id.* at 186.

⁹⁴ FEDERAL COMMUNICATIONS COMMISSION, TRENDS IN TELEPHONE SERVICE 10–14 (2001).

⁹⁵ MCMASTER, *supra* note 47, at 150–51.

⁹⁶ *Id.* at 151.

⁹⁷ See Speta, *supra* note 8, at 1091.

⁹⁸ Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56 (codified as amended in scattered sections of 47 U.S.C.). For a detailed narrative account of many of the events leading up to and following the passage of the FTA from the perspective of former FCC Chairman Reed E. Hundt, see REED E. HUNDT, YOU SAY YOU WANT A REVOLUTION (2000).

⁹⁹ Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56.

competitive following the MFJ, the FTA sought to spur telephone competition at the local level. To accomplish this end, Congress devised a scheme of deregulation through regulation of the local loop that forced ILECs to provide CLECs with access to their facilities at discounted rates.¹⁰⁰

The FTA attempts to break apart an ILEC's monopoly position over a particular area in three different ways. A CLEC may build its own facilities, purchase wholesale service from an ILEC, or lease elements of an incumbent's network.¹⁰¹ To spur ILEC cooperation, the FTA allows ILECs to enter the long distance market provided certain competitive conditions exist in the local market.¹⁰² Additionally, the FTA attempts to limit the role that state regulatory commissions may play in preventing CLEC entry into local markets.¹⁰³

Under the FTA, if a CLEC decides to take the expensive course of building its own network, an ILEC must interconnect the CLEC's network with the incumbent network.¹⁰⁴ If a CLEC decides to purchase wholesale service from an ILEC,¹⁰⁵ such service must be provided either through a rate agreed upon by the ILEC and the CLEC or at a rate determined by state utility commissions.¹⁰⁶ Under this scenario, a firm with no facilities of its own must pay the wholesale rate for the service in addition to costs for marketing, billing, and customer service.¹⁰⁷

¹⁰⁰ See 47 U.S.C. § 251(b) (2000); 47 U.S.C. § 251(c)(3) (2000); 47 U.S.C. § 251(c)(4) (2000).

¹⁰¹ 47 U.S.C. § 251(c) (2000).

¹⁰² 47 U.S.C. § 271 (2000).

¹⁰³ 47 U.S.C. § 253 (2000). Discussing the conflict between the FCC and state utility commissions in the implementation of the FTA, former FCC Chairman Hundt notes: "After competition developed, we intended to end state regulation of local telephone prices charged to consumers. We would put the state regulators out of the communications business. Perhaps that was one of the reasons they did not welcome our assertion of preemptive federal jurisdiction." HUNDT, *supra* note 98, at 157.

¹⁰⁴ 47 U.S.C. § 251(c)(2) (2000).

¹⁰⁵ Under this provision of the FTA, an ILEC has the duty "to offer for resale at wholesale rates any telecommunications service that the carrier provides at retail to subscribers who are not telecommunications carriers[.]" 47 U.S.C. § 251(c)(4)(A) (2000).

¹⁰⁶ State utility commissions should determine this rate "on the basis of retail rates charged to subscribers for the telecommunications service requested, excluding the portion thereof attributable to any marketing, billing, collection, and other costs that will be avoided by the local exchange carrier." 47 U.S.C. § 252(d)(3) (2000).

¹⁰⁷ *Id.*

The third method of entry for a competitive provider—the leasing of unbundled network elements at cost-based rates¹⁰⁸—has been the “primary network sharing mechanism” within the FTA, as well as a source of extensive litigation.¹⁰⁹ In the implementation of this provision, Congress required that ILECs negotiate in “good faith” with CLECs requesting access to a portion of an ILEC’s unbundled network.¹¹⁰ If an ILEC and a CLEC cannot agree upon a price, then a state commission must determine a “nondiscriminatory,” “just and reasonable rate for the interconnection of facilities and equipment.”¹¹¹

What constitutes a “nondiscriminatory,” “just and reasonable rate” has been the source of great contention between the FCC, ILECs, CLECs, and state utility commissions.¹¹² The FTA provides little guidance for implementation beyond stating that such a rate should value “the cost . . . of providing the . . . network element [which] may include a reasonable profit” while disregarding any “reference to a rate-of-return or other rate-based proceeding.”¹¹³ In implementing rules interpreting this phrase, the FCC chose to use TELRIC,¹¹⁴ a forward-looking process to estimate cost. This

¹⁰⁸ 47 U.S.C. § 251(c)(3) (2000). The statute states that each ILEC has “[t]he duty to provide, to any requesting telecommunications carrier for the provision of a telecommunications service, nondiscriminatory access to network elements on an unbundled basis at any technically feasible point on rates, terms, and conditions that are just, reasonable, and nondiscriminatory.” *Id.*

¹⁰⁹ Schneider, Goldman & Hartnett, *supra* note 46, at 19. The authors also note: “Predictably, the Act has spawned eight years of litigation, most of which pitted BOC claims that the regulators were too aggressive, given Congress’s desire that competitive market forces prevail, against competitors’ claims that the regulators were not doing enough. . . .” *Id.* at 18. See also *AT&T Corp. v. Iowa Utils. Bd.*, 525 U.S. 366, 385 (1999) (holding that the FCC has jurisdiction to adopt local competition rules which cover pricing as well as upholding the FCC’s rules allowing CLECs to lease all necessary network elements from ILECs) [hereinafter IUB]; *Verizon Commc’ns v. Fed. Commc’ns Comm’n*, 535 U.S. 467, 498–500 (2002) (holding that the FCC may require state utility commissions to use a forward-looking method to determine costs without consideration of historical or past investment of incumbents); *U.S. Telecom Ass’n v. Fed. Commc’ns Comm’n*, 290 F.3d 415, 428–29 (D.C. Cir. 2002) [hereinafter USTA I] (ordering the FCC to revise unbundling rules because its national standard for determining “impairment” failed to consider competitive realities in local markets); USTA II, *supra* note 4, at 569.

¹¹⁰ 47 U.S.C. §§ 251(c)(1), 252 (2000).

¹¹¹ 47 U.S.C. § 252(d)(1) (2000).

¹¹² *Id.* See generally *supra* note 109.

¹¹³ 47 U.S.C. § 252(d)(1)(A) (2000).

¹¹⁴ TELRIC stands for Total Element Long Run Incremental Cost. It is defined as “the forward-looking cost over the long run of the total quantity of the facilities and functions that are directly attributable to, or reasonably identifiable as incremental to, such element, calculated taking as a given the incumbent LEC’s provision of other

process was challenged unsuccessfully by ILECs as well as state utility commissions as an unreasonable interpretation of the FTA.¹¹⁵

The FCC's implementation of the FTA was also challenged by ILECs and state utility commissions as beyond the FCC's authority, because local competition rules should be set by the states.¹¹⁶ Although the Supreme Court held that the FCC had jurisdiction to set local competition rules,¹¹⁷ the Commission's initial list of unbundled network elements was invalidated because the Commission did not consider whether a CLEC's service would be impaired if any of the unbundled elements were not included.¹¹⁸ The Court stated that in determining which elements should be available for CLECs, the FCC must use, "some limiting standard, rationally related to the goals of the Act."¹¹⁹ In response to this holding, the FCC issued a UNE Remand Order articulating a standard for evaluating which network elements needed to be unbundled.¹²⁰

The FCC's revised impairment standard was challenged by the ILECs as beyond the scope of the FTA.¹²¹ The ILECs successfully argued that the use of a national standard to determine impairment was inappropriate because competitive impairment varies by locale.¹²² The D.C. Circuit explained:

As to almost every element, the Commission chose to adopt a uniform national rule, mandating the element's unbundling in every geographic market and customer class, without regard to the state of competitive impairment in any particular market. As a result, UNEs will be available to CLECs in many markets where there is no reasonable basis for thinking that

elements." 47 C.F.R. § 51.505(b) (2005). To determine cost, a state utility commission must measure the forward-looking cost based on usage of the most efficient telecommunications technology, a forward-looking cost of capital, and economic depreciation rates. *Id.* A simpler definition is provided by NEWTON'S TELECOM DICTIONARY which describes TELRIC as "a way of figuring out what phone service should cost based on the incremental cost of new equipment and new labor, not counting the embedded cost of old equipment and the labor to install that old equipment." NEWTON'S TELECOM DICTIONARY, *supra* note 37, at 799.

¹¹⁵ Verizon Commc'ns v. Fed. Commc'ns Comm'n, 535 U.S. 467, 475 (2002).

¹¹⁶ IUB, *supra* note 109, at 374.

¹¹⁷ *Id.* at 377-78.

¹¹⁸ *Id.* at 387-88.

¹¹⁹ *Id.* at 388.

¹²⁰ See Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, 15 F.C.C.R. 3696 (1999). The FCC's new standard stated that a CLEC would be impaired if "lack of access to that element materially diminishes a requesting carrier's ability to provide the services it seeks to offer." *Id.* at ¶ 51.

¹²¹ USTA I, *supra* note 109, at 417.

¹²² *Id.* at 422.

competition is suffering from any impairment of a sort that might have the object of Congress's concern.¹²³

The D.C. Circuit therefore ordered that the FCC revise its unbundling rules subject to some considerations provided by the court.¹²⁴

The FCC responded by once again drafting new standards for determining impairment.¹²⁵ These new standards greatly reduced which elements of an incumbent's network could be unbundled. Among the elements that remained capable of being unbundled were the switches serving residential and local business markets.¹²⁶ Switches are considered the "lynchpin" to providing a circuit that functions from end-to-end in a given telephone call.¹²⁷ Under the FCC's new guidelines, lack of access to switches constituted "impairment" absent evidence to the contrary.¹²⁸ To ensure compliance with *USTA I*'s call for region-specific standards, the FCC gave willing state utility commissions the authority to determine if there existed any local conditions in which lack of access to switches would not constitute impairment.¹²⁹

ILECs once again appealed the Commission's new "impairment" rules arguing that they did not conform to the D.C. Circuit's holding.¹³⁰ The D.C. Circuit invalidated the FCC's new rules as an unlawful subdelegation of Commission authority to the states.¹³¹ By invalidating the FCC's scheme of monitoring "impairment" in access to switches, the D.C. Circuit made it virtually impossible for CLECs to obtain unbundled access to essential elements of an incumbent's network at state-imposed wholesale rates. This holding was considered by some CLECs as the equivalent of a death knell to their ability to compete in the local exchange market. Shortly after the United States Solicitor General and the FCC announced that the government would not appeal this ruling, AT&T, the largest CLEC at the time, announced its plan to stop soliciting new local residential customers and to raise rates on

¹²³ *Id.*

¹²⁴ *Id.* at 422, 427–29.

¹²⁵ Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers, 18 F.C.C.R. 16978 (2003) [hereinafter Unbundling 2003]. The new standards only allowed competitive impairment "when lack of access to an incumbent LEC network element poses a barrier or barriers to entry, including operational and economic barriers, that are likely to make entry into a market uneconomic." *Id.* at ¶ 84.

¹²⁶ *Id.* at ¶ 415.

¹²⁷ Schneider, Goldman & Hartnett, *supra* note 46, at 20.

¹²⁸ Unbundling 2003, *supra* note 125, at ¶¶ 464–75.

¹²⁹ *Id.* at ¶¶ 498–505.

¹³⁰ *USTA II*, *supra* note 4, at 564.

¹³¹ *Id.* at 566.

many of its current customers.¹³² MCI, the second largest CLEC, also announced that it would consider exiting the residential local market and noted that further "consolidation" within the industry was now likely.¹³³

The FCC responded to the *USTA II* decision by issuing new rules for unbundled network access in February of 2005.¹³⁴ Under these new rules, ILECs are no longer required to provide CLECs with unbundled access to their local switches for the purpose of adding new customers.¹³⁵ In addition, a CLEC whose current customers are served by leased access to local switches, has one year to develop its own facilities or negotiate new leases with the ILEC whose switches it is currently using.¹³⁶ In adopting this new rule, the FCC noted, "we believe that the attendant increase in incentives to deploy facilities justify a bar on unbundling even where the competitive carrier might be 'impaired.'"¹³⁷ To compete in local telephony markets, CLECs must now either negotiate leases for access to switches with ILECs or build competing facilities.

Since the passage of the FTA, the telecommunications industry has changed dramatically. During this time firms have consolidated¹³⁸ and delved into new markets.¹³⁹ In early 2005, MCI's prediction of future industry consolidation came to fruition as SBC and AT&T announced plans to merge.¹⁴⁰ Less than two weeks later, MCI became a takeover target as

¹³² Ken Belson, *AT&T Plans to Raise Its Rates for Residential Calling Plans*, N.Y. TIMES, Aug. 4, 2004, at C1.

¹³³ Schneider, Goldman & Hartnett, *supra* note 46, at 23.

¹³⁴ See Unbundled Access to Network Elements, 70 Fed. Reg. 8940 (Feb. 24, 2005) [hereinafter Unbundled Access] (to be codified at 47 C.F.R. pt. 51).

¹³⁵ *Id.* at ¶ 61. This provision became effective March 11, 2005. *Id.* at ¶ 66.

¹³⁶ *Id.* at ¶ 5.

¹³⁷ *Id.* at ¶ 61.

¹³⁸ The seven Regional Operating Companies created by the MFJ and the two large independent local exchange carriers (GTE and SNET) have been greatly reduced. Pacific Telesis, Ameritech, and SNET have merged with Southwestern Bell to form SBC Communications; US West has merged with Qwest; Nynex, Bell Atlantic, and GTE have merged to form Verizon Communications; and BellSouth has remained although it is frequently the subject of merger rumors with SBC Communications because the two firms jointly own Cingular Wireless. See BENJAMIN, LICHTMAN & SHELANSKI, *supra* note 20, at 793 (describing SBC and Verizon's merger activities); Ken Belson, *BellSouth, Indifferent to Mergers, Seems Certain of its Path*, N.Y. TIMES, Feb. 28, 2005, at C2 (noting that despite BellSouth's aversion to large acquisitions, it may be a takeover target for SBC); Associated Press, *FCC Approves Qwest and U.S. West Merger Accord*, N.Y. TIMES, Mar. 11, 2000, at C3 (noting FCC 5-0 approval of Qwest/US West merger).

¹³⁹ See Latour, *infra* note 148.

¹⁴⁰ See Ken Belson, *SBC Near Deal to Acquire AT&T for \$16 Billion*, N.Y. TIMES, Jan. 31, 2005, at A18.

Verizon and Qwest made offers to acquire it with Verizon ultimately prevailing.¹⁴¹ The SBC/AT&T merger marked a telecommunications milestone as AT&T, the firm which has played the central role in the creation of U.S. telephony, became a target for one of its former regional Bell Operating Companies. In a sense, PSTN telephony has come full circle as Bell's progeny begin to exert some of the monopoly power once wielded by their parent. With these recent developments one must wonder where the future of competitive PSTN telephony lies.

Nearly a decade after the implementation of the FTA, its promise of robust local competition has failed to materialize, and the future prospects for competitive local telephony appear doubtful.¹⁴² Yet the telephone market of the future appears quite different from the market of the past. A competitive market for wireless telephony has emerged and there are now more wireless telephones in the U.S. than there are traditional lines.¹⁴³ With the introduction of VoIP and the continuous blurring of the traditional lines separating cable and telephony, experts have begun to question the efficacy of the FTA in achieving both its stated purpose and as appropriate legislation to govern the telecommunications in the future.¹⁴⁴ Nonetheless, the vast majority of Americans continue to receive service over the PSTN, and if a new act is necessary, such an act must consider ways to increase competition amongst PSTN providers as well.

IV. THE POSSIBILITIES OF INTERNET PROTOCOL

When the FCC launched its Notice of Proposed Rulemaking (NPR) regarding VoIP, it did not limit its inquiry to concerns about VoIP as a

¹⁴¹ Matt Richtel & Andrew Ross Sorkin, *Verizon Agrees to Acquire MCI for \$6.6 Billion, Beating Qwest*, N.Y. TIMES, Feb. 14, 2005, at A1; Jesse Eisinger, *Subplot in Contest for MCI: Fast Money vs. the Long Term*, WALL ST. J., Mar. 9, 2005, at C1.

¹⁴² See Joseph Farrell, *Creating Local Competition*, 49 FED. COMM. L.J., 201, 211 (1996) ("How can an Act that says 'shall' 2036 times be deregulatory?"); Robert W. Crandall, *Local and Long Distance Competition: Replacing Regulation With Competition*, in COMMUNICATIONS DEREGULATION AND FCC REFORM 53 (Jeffrey A. Eisenbach & Randall J. May eds., 2001) ("Rather than freeing the entire sector from government regulation, the 1996 Act established a new, more complicated regulatory regime that has created controversy, litigation, and only modest progress."); Leslie Cauley, *Consumer Advocates Fear Losing AT&T's Voice*, USA TODAY, Mar. 7, 2005, at B1 (discussing the effects of the AT&T/SBC merger on consumer options as well as on congressional lobbying).

¹⁴³ Squeo, *supra* note 18.

¹⁴⁴ See *id.*; Labaton, *supra* note 18; Speta, *supra* note 8, at 1154–55; Stephen Labaton, *Reshaping Telecommunications: The Regulators*, N.Y. TIMES, Feb. 15, 2005, at C1.

substitute for traditional telephony. Instead, the NOPR examined the diverse uses of IP-enabled services in general and the potential changes that they will bring to the communications marketplace.¹⁴⁵ Internet protocol's (IP) efficiency creates the possibility for the development of new and highly personalized forms of communication that were previously unavailable through the PSTN or even through cable networks. The full scope of these offerings will be realized over time as programmers and users develop increasingly efficient uses of IP. Nonetheless, it appears that with improved broadband speeds and technology, it is likely that voice, data, and television transmission will all converge.¹⁴⁶

A. *Battle of the Bundles*

The telecommunications convergence, made possible through the use of internet protocol, has already begun eroding traditional boundaries within the communications industry. Currently, the largest suppliers of broadband access are incumbent cable and telephone companies. As these companies compete for broadband users,¹⁴⁷ it appears likely that competition over broadband will mark the frontline of what will be a battle for multiple telecommunications services. Cable companies have begun offering

¹⁴⁵ IP-Enabled Services, *supra* note 12.

¹⁴⁶ For a discussion of the likely effects that this convergence will have on the competitive and regulatory structure of the communications industry, see Metzger & Broderick, *supra* note 26. Without explicitly calling for a new telecommunications act, Metzger & Broderick predict that this convergence will lead to a technologically neutral regulatory paradigm. The authors explain:

Thus, the anticipated leveling of the communications playing field will be realized, not by the expansion of traditional carrier obligations into unregulated industries, but rather by the expulsion of the anachronistic common carrier classification with its attendant burdens, accompanied by a "ground up" redistribution of legal rights and benefits based on fluid technologies and the existing (rather than historical) economic and social functions of particular market actors.

Id. at 13. See also Frieden, *supra* note 79, at 1277 (considering "the consequences resulting from the creation of legislative definitions which cannot keep pace with quickly changing and converging technologies in the information, communications and entertainment . . . industries"); Christopher Rhoads & Li Yuan, *Talk of the Internet: As Broadband Proliferates, More Web Users Communicate With One Another By Voice*, WALL ST. J., Aug. 25, 2005, at B1.

¹⁴⁷ See *supra* note 7.

telephone service either through VoIP or bundling deals with CLECs.¹⁴⁸ Similarly, some ILECs, such as SBC, have responded by selling direct broadcast satellite (DBS) television to their customers in bundled packages.¹⁴⁹ Over the long term, telephone companies plan to lay high speed fiber optic wire that will be capable of launching new services such as IPTV (internet protocol television), thereby allowing RBOCs to compete with cable companies as one-stop telecommunication providers.¹⁵⁰ Even the competitive wireless telephone market may be affected by this convergence because the nation's two largest wireless carriers are RBOC-controlled.¹⁵¹ Such bundled offerings may prove fatal to competitors who are unable to offer the discounts that will come with multiple subscriptions as well as the convenience of a single bill, which is anticipated to attract customers. The telecommunications landscape may become one of duopoly¹⁵² between

¹⁴⁸ For example, by the summer of 2004, in Omaha, Nebraska the regional cable company (Cox Communications, Inc.) had more subscribers to its PSTN telephone service than did the regional Bell operator (ILEC). Almar Latour, *Free for All: Telecom Companies Are Invading One Another's Turf Like Never Before*, WALL ST. J., Sept. 13, 2004, at R1.

¹⁴⁹ *Id.* In a similar strategy, Verizon now offers New York and other subscribers in East Coast states discounted DirecTV satellite service. Peter Grant, *Here Comes Cable . . . And It Wants A Big Piece of the Residential Phone Market*, WALL ST. J., Sept. 13, 2004, at R4.

¹⁵⁰ Verizon has launched a television service delivered over fiber optic wire in select markets. Peter Grant, *Getting Your MTV From the Phone Company*, WALL ST. J., Sept. 21, 2005, at D1. See Almar Latour, *Showdown of the Giants: Verizon, SBC Saddle Up to Compete Head to Head With Cable in TV Service*, WALL ST. J., Nov. 8, 2004, at B1. (discussing SBC and Verizon's plans to launch cable service through new fiber optic networks). For a discussion of an IPTV launching by British television provider BT, see Jo Twist, *Broadband Set to Revolutionise TV*, BBC News (Mar. 9, 2005), available at <http://news.bbc.co.uk/2/hi/technology/4332337.stm>.

¹⁵¹ America's two largest wireless telephone providers are Cingular and Verizon. After merging with AT&T Wireless, Cingular has approximately 46,007,000 subscribers and Verizon has 37,552,000 subscribers. Verizon Wireless is a joint venture with Verizon Communications (which controls 55%) and Vodafone Group PLC. Cingular Wireless is a joint venture between ILECs SBC Communications, Inc. and BellSouth Corporation. 2004 F.C.C. ANN. REP. 04-216, at 18 n.69, available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-04-216A1.pdf.

¹⁵² Electric companies may emerge as an alternate third provider of high speed internet access. This technology is known as "broadband over power line" (BPL). The FCC has issued new requirements and measurement guidelines designed to facilitate BPL research and deployment. See 47 C.F.R. §§ 15.601–15.615 (2005). Another possible competitor may emerge from municipalities that plan to offer wireless service. The possibility of municipal broadband has been a contentious issue and incumbent

competing regional cable and telephone providers, leaving small VoIP providers, internet service providers (ISPs), and CLECs shut out from the competitive market.¹⁵³ Under a duopoly, it is possible that consumers may see fewer benefits of the competitive market than proponents of deregulation claim.¹⁵⁴

In the upcoming battle for consumers between cable companies and ILECs, it appears that cable companies currently hold the upper hand. Many of the upgrades necessary to supply broadband internet access and VoIP were made as providers switched to digital cable. Since 1996, the cable industry as a whole has spent over \$95 billion upgrading facilities to provide for enhanced services, with Comcast, the nation's largest cable provider, spending \$39 billion alone.¹⁵⁵ As such, the cable industry currently possesses the greatest bundling capacity, and numerous cable providers are already offering broadband access, telephony through VoIP, and cable packages over their own facilities. This eliminates the need for the strategic alliances and

broadband providers have sought to curb such wireless initiatives through intense lobbying and calls for a congressional ban on municipal broadband. James Dao, *Philadelphia Hopes For Wireless Lead*, N.Y. TIMES, Feb. 17, 2005, at A18 (discussing the debate over municipal wireless broadband service). If current plans for municipal broadband prove successful, the government may enter into direct competition with cable providers and ILECs. *Id.*

¹⁵³ See Young & Drucker, *supra* note 3 ("With their rivals reduced mainly to small niche companies, the local-phone and cable companies quickly could start to behave like a classic duopoly in which neither side considers it worthwhile to start a war for market share."). For a discussion of differing perspectives on this issue, see Riley K. Temple, Mary Greczyn, & Halprin Temple, *Recent Developments in Broadband Regulation*, 813 PLI/PAT 175, 206–17 (2004). Arguing on behalf of ISPs, Earthlink CEO Gary Betty told the Senate Committee on Commerce, Science & Transportation in May of 2004, "So called facilities-based competition between cable and phone companies is good as far as it goes, but it only creates a duopoly, or more precisely, a 'double-headed monopoly.'" *Id.* at 206. Jonathan Krim, *Will Providers Provide Equally?*, WASH. POST, May 27, 2004, at E1 (discussing concerns that broadband providers will favor some applications over others). Krim reports:

AT&T, which also is jumping into the VoIP market, says it is taking the cable industry at its word that it will not discriminate. But the company is watching carefully and worries that the potential for mischief increases as the country increasingly moves toward a *broadband duopoly of the large phone and cable operators*.

Id. (emphasis added).

¹⁵⁴ See J.P. Mayberry, J.F. Nash & M. Shubik, *A Comparison of Treatments of A Duopoly Situation*, 21 ECONOMETRICA 141, 152 (Jan. 1953) ("We have seen, in this simplified model, how collusion may tend to restrict production and raise prices and profits. It is noteworthy that these effects are still quite marked when there are restrictions ('laws') against side payments. It seems, therefore, that such laws or restrictions would naturally result in implicit collusion.").

¹⁵⁵ Hunt, *supra* note 34.

joint ventures that currently characterize ILEC bundling.¹⁵⁶ Additionally, the facilities upgrades proposed by some regional Bells (ILECs) will take many years, providing regional cable companies with an advantage in many of the nation's largest markets.¹⁵⁷

Until recently, cable providers were also aided by the dubious regulatory classification of new IP-based services. This is best demonstrated by the uncertainty that surrounded the status of high speed internet access.¹⁵⁸ The FCC issued a Declaratory Ruling classifying cable modem service as an interstate "information service"¹⁵⁹ rather than a "cable service"¹⁶⁰ or a "telecommunications service."¹⁶¹ The FCC reached this conclusion because cable modem service combines the transmission of data with computer processing, information provision, and computer interactivity, enabling end users to run a variety of applications.¹⁶² This rationale was upheld by the Supreme Court in *National Cable & Telecommunications Ass'n v. Brand X Internet Services*.¹⁶³ Despite the FCC's ruling, it remained unclear if the same rationale would apply to ILEC broadband facilities or if those facilities

¹⁵⁶ See Grant, *supra* note 149.

¹⁵⁷ *Id.*

¹⁵⁸ The problem of regulatory status is crucial to the VoIP debate as well. By continuing to place obligations on providers based on the regulatory classification of their service, the FTA encourages new entrants as well as existing actors to try to use the classification scheme to provide a regulatory advantage over similar services. See Rob Frieden, *Regulatory Opportunism in Telecommunications: The Unlevel Competitive Playing Field*, 10 COMM'LAW CONSPECTUS 81, 99-101 (2001); Frieden, *supra* note 79, at 1277-78.

¹⁵⁹ Internet Over Cable Declaratory Ruling; 17 F.C.C.R. 4798 (2002) [hereinafter Cable Modems]. An "information service" is statutorily defined as the "offering of a capability for generating, acquiring, storing, transforming, processing, retrieving, utilizing, or making available information via telecommunications, and includes electronic publishing, but does not include any use of any such capability for the management, control, or operation of a telecommunications system or the management of a telecommunications service." 47 U.S.C. § 153(20) (2000).

¹⁶⁰ Cable service is statutorily defined as, "(A) the one-way transmission to subscribers of (i) video programming, or (ii) other programming service, and (B) subscriber interaction, if any, which is required for the selection or use of such video programming or other programming service." 47 U.S.C. § 522(6) (2000).

¹⁶¹ Telecommunications service is statutorily defined as, "the offering of telecommunications for a fee directly to the public, or to such classes of users as to be effectively available directly to the public, regardless of the facilities used." 47 U.S.C. § 153(43) (2000).

¹⁶² Cable Modems, *supra* note 159, at ¶ 38.

¹⁶³ Nat'l Cable & Telecomm. Ass'n v. Brand X Internet Serv., 125 S. Ct. 2688, 2710 (2005).

would be considered a "telecommunications service" subject to the FTA's sharing requirements. This uncertainty was resolved shortly after the Court's decision in *Brand X*, when the FCC announced that "wireline broadband Internet access providers, like cable modem service providers, will be considered information service providers and will no longer be compelled by regulation to unbundle and separately tariff the underlying transmission component of their Internet access service."¹⁶⁴ It now appears that there will be regulatory parity amongst ILECs and cable providers with respect to broadband offerings.

ILEC broadband service's regulation by classification is illustrative of the nature of regulation under the FTA, where providers of a service may face more or less regulation by a simple shift in the regulatory category in which they are placed. Although this system was reasonable when it was first implemented in 1934, the regulatory uncertainty surrounding the current telecommunications convergence raises questions that the present regulatory scheme was never intended to answer. Under this system, regulators, rather than consumers, will be picking winners and losers in the telecommunications marketplace.¹⁶⁵ As IP apparati continue to reshape the telecommunications industry, one is forced to ask if the current system of regulation by classification remains viable.

B. Neutral Networks

Complicating the prospects of a competitive marketplace are concerns over network neutrality.¹⁶⁶ If the broadband access that is necessary for IP services such as VoIP is only available through cable modem or DSL, then cable companies and ILECs could potentially limit the uses of IP services by their customers.¹⁶⁷ Customers may be limited in their choice of or the quality

¹⁶⁴ Press Release, FCC, Chairman Kevin J. Martin Comments on the Adoption of Wireline Broadband Access Order (Aug. 5, 2005), available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-260433A2.pdf. See 2005 F.C.C. REP. & ORDER 05-125, available at <http://www.fcc.gov/FCC-05-150A1.pdf>, for the complete order.

¹⁶⁵ Frieden, *supra* note 79, at 1277.

¹⁶⁶ Network neutrality is the maintenance of the internet as an outlet for all applications as opposed to favored uses. A neutral network would allow all uses to be developed. Regulation would be required to guarantee network neutrality and there have been strong arguments made both for and against it. Tim Wu, *Network Neutrality, Broadband Discrimination*, 2 J. ON TELECOMM. & HIGH TECH. L. 141, 141 (2003). For an argument in favor of network neutrality, see *id.*

¹⁶⁷ The FCC has already faced its first case of an incumbent broadband provider blocking VoIP traffic. The FCC settled with Madison River Communications Corp. after

of VoIP or other enhanced IP service providers by the terms of their broadband connection. The Yankee Group, a market research firm, released a study that is pessimistic about the future of small VoIP providers.¹⁶⁸ One analyst noted:

It may seem like a dodgy competitive tactic, but broadband network providers could slow down Vonage's service. As subscribers increase their use of latency sensitive and graphic rich . . . traffic, broadband providers could give network precedence to their own revenue-generating services. Unless Vonage pays fees to the network provider, there is no reason the operator should not make the service a lower priority on the network.¹⁶⁹

Another study of network neutrality found that "broadband operators' networks and usage restrictions favored the applications of the late 1990s (primarily the World Wide Web and other client-server applications), and disfavored more recent applications . . . like home networking, peer-to-peer applications, and home telecommuting."¹⁷⁰ Amongst broadband providers, cable companies generally placed more contractual restrictions on customers than providers of DSL.¹⁷¹ Advocates for network neutrality, such as Microsoft and Yahoo, argue that without government regulation, broadband providers will have the opportunity to discriminate against new or competing applications, thereby stunting IP development.¹⁷²

Opponents of network neutrality argue that a free market approach will produce the optimal availability of IP services without the costs and burdens associated with regulation.¹⁷³ If customers insist on network neutrality, opponents argue, then broadband providers will be forced to comply with consumer demands or risk losing customers to a competitor with fewer

the firm allegedly blocked voice data for nearly 200 Vonage customers. Under the terms of the agreement, Madison River Communications agreed to pay \$15,000 and to stop blocking VoIP traffic. FCC Commissioner Powell expressed a desire to deal with cases of VoIP-blocking on a case-by-case basis. Jonathan Krim, *Phone Company Settles in Blocking of Internet Calls*, WASH. POST, Mar. 4, 2005, at E2.

¹⁶⁸ Krim, *supra* note 153.

¹⁶⁹ *Id.*

¹⁷⁰ Wu, *supra* note 166, at 157.

¹⁷¹ *Id.*

¹⁷² See Temple, Greczyn & Temple, *supra* note 153, at 207.

¹⁷³ See James Speta, *Handicapping the Race for the Last Mile?: A Critique of Open Access*, 17 YALE J. ON REG. 39, 76–88 (2000) (positing that open access rules are unnecessary and possibly harmful because consumer demand for broadband access platform will force providers to have open networks). See also Phil Weiser, *Paradigm Changes in Telecommunications Regulation*, 71 U. COLO. L. REV. 819, 832–37 (2000) (arguing for a limited regulatory role in ensuring open access).

network restrictions.¹⁷⁴ Finally, opponents argue, broadband providers could work out agreements to give priority to some content over other content.¹⁷⁵ Under this scenario, the network would be biased toward firms that place the highest value on user access to their IP services.

The FCC briefly addressed these concerns when it released a policy statement designed to “preserve and promote the open and interconnected nature of public Internet.”¹⁷⁶ In this statement the FCC articulated four policies that will guide its future policymaking decisions.¹⁷⁷ These policies include:

- (1) consumers are entitled to access the lawful Internet content of their choice;
- (2) consumers are entitled to run applications and services of their choice, subject to the needs of law enforcement;
- (3) consumers are entitled to connect their choice of legal devices that do not harm the network; and
- (4) consumers are entitled to competition among network providers, application and service providers, and content providers.¹⁷⁸

These statements indicate the FCC’s desire to promote a neutral internet. Nonetheless, the FCC chose not to adopt these principles as formal rules and it is currently unclear how they will affect future decisions.¹⁷⁹

Concerns over network neutrality are indicative of the uncertainty surrounding the future of American telecommunications. While the FCC’s policy articulation demonstrates a desire to promote competition and innovation, it is unclear how this policy will be implemented and what role regulators will play. As voice, broadband, and video service merge, it is becoming increasingly clear that the FTA is not only ill-equipped to achieve its goal of fostering competition in traditional telephony, it also provides a limited framework for regulating the telecommunications offerings of the future. For the possibilities of internet protocol to be fully realized, there must be a regulatory scheme that fosters innovation and allows America’s telecommunications technologies, both new and old, to thrive through competition.

¹⁷⁴ Speta, *supra* note 173, at 76.

¹⁷⁵ *Id.*

¹⁷⁶ Press Release, FCC, FCC Adopts Policy Statement (Aug. 5, 2005), *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-260435A1.pdf.

¹⁷⁷ *Id.*

¹⁷⁸ *Id.*

¹⁷⁹ *Id.*

V. REGULATING THE REVOLUTION

Congress provided a strong signal with the Telecommunications Act of 1996 that competition should be paramount in the regulation of the telecommunications industry. Nonetheless, some industry analysts argue that the "silo" approach that the FTA continued to use is no longer compatible with emerging technologies.¹⁸⁰ It is also argued that any effort to fix the Act by employing a similar approach will hamper competition as well as technological development.¹⁸¹ When one combines these criticisms with the FTA's failure to foster robust local competition, it becomes clear that the time has come for a new Act.¹⁸²

In developing the framework for a new Act, it is necessary to keep in mind that many Americans will continue to use traditional telephony.¹⁸³ If the PSTN remains the primary method through which millions of Americans place their telephone calls, then the need for competitive providers of PSTN

¹⁸⁰ Frieden, *supra* note 79, at 1277–78; John T. Nakahata, *Broadband Regulation at the Demise of the 1934 Act: The Challenge of Muddling Through*, 12 COMMLAW CONSPICUOUS 169, 169 (2004) ("If the technological assumptions underlying the Act's core statutory framework are indeed collapsing, then the challenge for the Commission is how to muddle through to best achieve sound public policy—and some degree of regulatory certainty—in a statutory environment that will be fraught with artificial, legacy statutory distinctions.").

¹⁸¹ Members of Congress concerned about the status of VoIP under the existing FTA framework have introduced legislation to preempt state authority except in the areas of state Universal Service Funds, 911 programs, and compensation among phone companies. See VoIP Regulatory Freedom Act of 2004, S. 2281, 108th Cong. (2004); VoIP Regulatory Freedom Act of 2004, H.R. 4129, 108th Cong. (2004).

¹⁸² Alfred Kahn describes the FTA's failure to promote effective local competition: "Again as in the case of airlines, the unintended adverse consequences of deregulation in telecommunications not only offer no good reason to re-regulate and re-cartelize the industry; they counsel an early abandonment of oxymoronic efforts to promote competition by regulation." ALFRED E. KAHN, LESSONS FROM DEREGULATION: TELECOMMUNICATIONS AND AIRLINES AFTER THE CRUNCH 23 (2003).

¹⁸³ Although VoIP is becoming widely available, a recent study found that only 40% of those questioned knew what VoIP was, and once participants learned "that VoIP operates like existing telephone service, but will be cheaper and can provide additional features," 71% expressed an interest in switching to it. Carol Wilson, *VON: Consumers Not Thrilled By Cheap VoIP*, TELEPHONY ONLINE, Mar. 8, 2005, http://telephonyonline.com/voip/news/von_voip_consumers_030805/index.html. An interesting finding by this survey was that interest in VoIP "dropped dramatically" amongst the 60% of respondents who had not heard of VoIP when its price fell below a monthly fee of \$35..*Id.*

service remains vital.¹⁸⁴ Nonetheless, the state of telecommunications should not remain stagnant by regulating new technologies with legacy approaches. In creating a new Telecommunications Act, arguments that have been posited in favor of a relaxed regulatory approach for new technologies, such as VoIP, should apply—when possible—to the regulation of traditional telephony.

A. The VoIP Debate

The introduction of VoIP has fostered much debate concerning its regulatory status under the FTA. In *IP-Enabled Services*, former FCC Chairman Powell noted that the differences between IP services and traditional telecommunications services justify a differing regulatory structure.¹⁸⁵ Powell explained: “[W]e cannot simply contort the character of the Internet to suit our familiar notions of regulation. We will not dumb down the genius of the web to match the *limited vision of a regulator*.”¹⁸⁶ Powell’s comments indicate a preference for the very limited regulation of IP services. His sentiments are echoed in many of the responses filed with the Commission.¹⁸⁷ These comments, written from diverse perspectives, argued both for and against extensive regulation of VoIP.¹⁸⁸

¹⁸⁴ Despite the advances in the quality of VoIP’s service, Consumer Reports notes: “VoIP isn’t yet the equal of landline. Judging from our panelists’ experiences, installation difficulties, voice quality, and problems with incoming calls put VoIP at a disadvantage at present. Most panelists said they wouldn’t want to keep VoIP. For them, the inconvenience outweighed the prospect of lower bills.” *Internet Phoning—Should You Try It?*, CONSUMER REP., Feb. 2005, at 17.

¹⁸⁵ *IP-Enabled Services*, *supra* note 12, at 4952.

¹⁸⁶ *Id.* (emphasis added).

¹⁸⁷ See, e.g., *In the Matter of IP-Enabled Services: Comments of Microsoft Corporation*, No. 04-36, at i (May 28, 2004), http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6516199730 [hereinafter Microsoft Comments] (arguing that the following regulatory principles should guide VoIP regulation: 1) “Innovation Requires a Regime of Light Regulation;” 2) “FCC Action Should Account for the Differences Between Networks;” 3) “Solutions Should Focus on Objectives, not Means;” 4) “Consumer Choice must be Preserved”); *In the Matter of IP-Enabled Services: Comments of National Cable & Telecommunications Association*, No. 04-36, at 3–5 (May 28, 2004), http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6516199546 [hereinafter NCTA Comments] (“Only regulations essential to preserving public health, safety and related concerns should be imposed on VoIP, however. Regardless of how VoIP is classified under the Communications Act, overregulation will almost certainly delay and frustrate the growth of this exciting new service.”); *In the Matter of IP-Enabled Services: Comments of the United States Telecom Association*, No. 04-36, at 3 (May 28, 2004), http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=651619

Central to the question of the regulation of VoIP is what roles the states and the federal government should play.¹⁸⁹ Those who favor an exclusive federal role often argue for preemption based on the difficulty and potential costs of differentiating interstate VoIP traffic from intrastate traffic.¹⁹⁰ Conversely, those who argue in favor of an increased state role note the functional similarities of traditional telephony and VoIP.¹⁹¹ These arguments are rooted in the regulatory structure of the FTA, an act whose system of regulation by classification appears ill-equipped to deal with IP-enhanced services.

Many arguments in favor of a relaxed regulatory approach note that such an approach is necessary for the development and deployment of new technologies.¹⁹² Without a relaxed regulatory environment, a VoIP provider could face regulation under fifty-one different regulatory schemes. This notion is articulated in the *USTA Comments* which argue: "[T]he burden of state economic regulation on interstate commerce would be extraordinary, as the states would be undermining the deregulation that the Commission has determined in related contexts [Cable Modems] (and should determine here) creates the best environment for investment in and deployment of interstate IP-enabled services."¹⁹³ By subjecting a firm to up to fifty different state regulatory schemes, state economic regulation significantly increases both

7736 [hereinafter *USTA Comments*] ("The Commission's decisions should uniformly be grounded in (1) the power of free markets to unleash innovation and bring benefits to consumers; (2) the need to treat all service providers even-handedly so as not to pick winners and losers through regulation; and (3) the imperative of protecting important social goals, including universal service, access to emergency services, and disability access.").

¹⁸⁸ This Note will mainly discuss the comments filed *against* extensive regulation of VoIP.

¹⁸⁹ In *Vonage*, the FCC preempted federal jurisdiction for the regulation of VoIP. *Vonage*, *supra* note 10, at 22,404.

¹⁹⁰ See *In the Matter of IP-Enabled Services: Comments of Cisco Systems, Inc.*, No. 04-36, at 45 (May 28, 2004), http://gulfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6516198790 [hereinafter *Cisco Comments*] ("Without information about the traffic's jurisdictional course, it is similarly impossible to separate IP-enabled traffic into intrastate and interstate components.").

¹⁹¹ See *In the Matter of IP-Enabled Services: Comments of the National Governors Association*, No. 04-36, at 4 (May 28, 2004), http://gulfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6516198475 ("[I]t is important to maintain the national federal-state framework established by Congress as part of the 1996 Act.").

¹⁹² See *supra* note 188.

¹⁹³ *USTA Comments*, *supra* note 187, at 36.

the cost of entry and a firm's operating expenses.¹⁹⁴ Consequently, proponents of light regulation of VoIP emphasize the expense of regulation in both financial and practical terms. Under this rationale, more regulation yields higher costs (which are translated to the consumer), fewer options, and less innovation.¹⁹⁵

Regulation is generally divided into two forms: economic and social.¹⁹⁶ Although most advocates of a light regulatory approach to VoIP argue for limited (if any) economic regulation, they differ on the need for social regulations, such as 911 service,¹⁹⁷ access for people with disabilities, and CALEA.¹⁹⁸ Both the United States Telecom Association (USTA)¹⁹⁹ and the

¹⁹⁴ In *Vonage*, the FCC expresses agreement with this rationale. It explains:

Allowing Minnesota's order to stand would invite similar imposition of 50 or more additional sets of different economic regulations We cannot, and will not, risk eliminating or hampering this innovative advanced service that facilitates additional consumer choice, spurs technological development and growth of broadband infrastructure, and promotes continued development and use of the Internet. To do so would ignore the Act's express mandates and directives with which we must comply, in contravention of the pro-competitive deregulatory policies the Commission is striving to further.

Vonage, *supra* note 10, at 22,427.

¹⁹⁵ PSTN customers pay significantly higher taxes/fees/surcharges on their bill compared to VoIP customers. PSTN fees range from \$5.50 to more than \$13, whereas VoIP surcharges range from \$0 to \$5. Peter W. Huber & Evan T. Leo, *Competition in the Provision of Voice Over IP and Other IP-Enabled Services (Prepared for and Submitted by Bellsouth, Qwest, SBC, and Verizon)*, No. 04-36, at 18 (May 28, 2004), http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=6516199328.

¹⁹⁶ See Robert W. Crandall, *An End to Economic Regulation?* 2, available at <http://www.brookings.edu/dybdocroot/views/papers/crandall/20030721.pdf> ("Economists generally distinguish between 'economic' and 'social' regulation. The former is the control of prices, service quality, and entry conditions in specific sectors, such as transportation, communications, and energy. The latter is the regulation of risks to health, safety, and the environment.").

¹⁹⁷ The FCC ordered VoIP providers whose service allows users to receive calls from and place calls over the PSTN to provide enhanced 911 capabilities to their customers. 2005 F.C.C. REP & ORDER 05-116, at ¶ 1, available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-05-116A1.pdf [hereinafter E911 Order].

¹⁹⁸ CALEA is the Communications Assistance for Law Enforcement Act. This Act requires telecommunications operators and manufacturers to build the capability to assist authorized law enforcement authorities with intercepting "all wire and electronic communications" and "call-identifying information." 47 U.S.C. § 1002 (2000). The FCC has ruled that facilities-based broadband providers as well as interconnected VoIP providers must comply with CALEA. 2005 F.C.C. REP & ORDER 05-153, at ¶¶ 26, 41,

National Cable and Telecommunications Association (NCTA)²⁰⁰ argue that VoIP providers should abide by CALEA, provide customer access to 911/E911 capabilities, and provide services to persons with disabilities.²⁰¹ Additionally, both the NCTA and the USTA argue that some form of universal service funding should be applied to VoIP, provided that the FCC revises its current method of universal service funding.²⁰² These views recognize the need for social regulation, yet emphasize that regulations seeking to move beyond what is socially useful are highly suspect and should be avoided in the national VoIP market. The FCC's decisions to preempt state utility commissions in the regulation of VoIP while mandating E911²⁰³ and CALEA²⁰⁴ access to certain VoIP providers indicate the Commission's willingness to limit economic regulation while maintaining social regulations. These decisions can be interpreted as distinguishing regulations that are necessary to address social concerns from those that stifle innovation and competition.

B. Rethinking Regulation

The VoIP debate provides an intriguing framework through which one may observe both the failures of the current telecommunications regulatory structure and the possibilities of a new approach. In addition, it offers a way of evaluating what should be viewed as absolutely necessary in a national regulatory scheme and that which is potentially harmful to the functioning of a competitive market. While examining arguments in favor of a relaxed regulatory approach to VoIP, one should ask whether the technological differences between VoIP and traditional telephony justify differing regulatory treatment, or if these differences are emphasized by VoIP

available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-05-153A1.pdf [hereinafter Broadband CALEA Order].

¹⁹⁹ The USTA is "the nation's oldest trade organization for the local exchange carrier industry." USTA Comments, *supra* note 187, at 1.

²⁰⁰ The NCTA is the trade organization that represents cable operators serving more than 90% of American cable subscribers. NCTA Comments, *supra* note 187, at 1.

²⁰¹ NCTA Comments, *supra* note 187, at 16; USTA Comments, *supra* note 189, at 36-42. *But see* Microsoft Comments, *supra* note 187, at 18 ("The Commission should first allow the marketplace to resolve these issues. Even where an IP voice service substitutes for POTS [plain old telephone system], any necessary social regulation should account for the nature of IP networks.").

²⁰² NCTA Comments, *supra* note 187, at 17; USTA Comments, *supra* note 187, at 37-38.

²⁰³ E911 Order, *supra* note 197.

²⁰⁴ Broadband CALEA Order, *supra* note 198.

proponents merely to avoid legacy regulations.²⁰⁵ If these arguments are made to avoid regulatory classifications, then, by divorcing them from the current regulatory structure, it is possible to see their applicability to traditional telephony.

Although end-to-end analysis of calls placed over the PSTN is possible, some of the other arguments for federal preemption of VoIP may also apply to traditional telephony. Despite the FTA's call for increased local competition, ILECs have maintained their stronghold in the market.²⁰⁶ If greater competition is to be achieved, it is imperative that there be minimal barriers to local entry. Nonetheless, current state economic regulations pose the same barrier to CLEC entry that is decried by proponents of light VoIP regulation. With this reality, one must wonder why calls for the need for innovation and a consistent regulatory scheme should not apply to local telephony. Given the uphill battle that CLECs face in the relatively entrenched market for local telephony, it is imperative that they operate under a regulatory scheme designed to foster innovation and investment.

If the regulatory roles of the fifty state utility commissions were largely curtailed, then the FCC's ruling that CLECs must provide their own facilities or negotiate commercial leases with ILECs could usher in new competition.²⁰⁷ The logic of the *Unbundled Access* ruling was that leased access at government-imposed wholesale rates created disincentives for both CLECs and ILECs to invest in their own facilities, thereby harming competition.²⁰⁸ This view is reminiscent of Justice Breyer's separate opinion in *IUB* in which he notes:

Increased sharing by itself does not automatically mean increased competition. It is in the *un*-shared, not in the shared, portions of the enterprise that meaningful competition would likely emerge. Rules that force firms to share *every* resource or element of a business would create not competition, but pervasive regulation, for the regulators, not the marketplace, would set the relevant terms.²⁰⁹

²⁰⁵ See Frieden, *supra* note 158, at 81 ("Over the years, incumbents and newcomers alike have gamed the regulatory process to secure a competitive advantage in terms of reduced regulation or cost savings. With skillful maneuvering, a largely unregulated venture can provide services functionally equivalent to those offered by a substantially regulated carrier.").

²⁰⁶ See *supra* Part III.B.

²⁰⁷ *Unbundled Access*, *supra* note 134, at ¶¶ 5, 61.

²⁰⁸ *Id.* at ¶ 61.

²⁰⁹ *IUB*, *supra* note 109, at 429 (Breyer, J., concurring in part, dissenting in part).

For Justice Breyer, local competition will only emerge when CLECs create their own facilities in areas where such redundant networks will not be wasteful.²¹⁰

The building of new networks requires a regulatory structure that encourages investment and provides a relatively low cost of entry—the opposite of what many VoIP commentators describe as the effect of the current scheme of telephone regulation.²¹¹ Just as proponents of relaxed VoIP regulation note that the imposition of differing (and sometimes contradictory) regulatory obligations by state utility commissions may discourage new entrants from entering the market, such obligations are equally harmful to providers of traditional telephony.

Regulating VoIP services that are used as a substitute for traditional telephony in a manner different from PSTN service picks “winners and losers” in the same way that is criticized by proponents of a relaxed regulatory structure for VoIP.²¹² To allow VoIP to compete directly with traditional telephony while regulating the two differently will create a regulatory bias in favor of VoIP. While one may make the case that the extensive capabilities of VoIP make it an altogether different service rather than a substitute, this argument fails to allow consumers to determine how VoIP should be used.²¹³ Allowing the market to be the true arbiter of success in the telecommunications industry means that all participants in that market should exist on a level playing field. Given VoIP’s technological superiority and efficiency, it makes little sense to burden traditional telephony with regulations that impose additional costs on an already more expensive platform.

Just as VoIP should not be burdened by legacy telephone regulations, it is time for those regulations to no longer saddle traditional telephony. In the years ahead, innovation and the integration of new technologies will be necessary for any telephone provider, whether its offerings are in the form of local exchange service or VoIP. Innovation may take differing forms that are representative of the technological differences between PSTN telephony and VoIP as well as the new realities of a changed telecommunications marketplace. For example, declining revenues in PSTN service as well as

²¹⁰ IUB, *supra* note 109, at 415–418.

²¹¹ See NCTA Comments, *supra* note 187, at 3–5.

²¹² See USTA Comments, *supra* note 187, at 3.

²¹³ See Microsoft Comments, *supra* note 187, at 4 (“Even where an IP-enabled service is substitutable for a traditionally regulated service, traditional regulation should not be reflexively applied. IP networks are different, and the FCC’s approach must recognize differences in network structure and capability and the resulting differences in the way services are composed and delivered over those networks.”).

increased competition from cable providers may ultimately create new incentives for ILECs to negotiate more favorable leases with CLECs for network elements. Such an approach may be necessary to combat steadily declining PSTN profits or to help finance the building of new ILEC networks.²¹⁴

In addition to suggesting the need for a relaxed regulatory approach for all of telephony, the VoIP debate also provides insight into what regulations should be viewed as necessary under a new regulatory scheme. The comments to the *IP-Enhanced Services* inquiry indicate that even some of the most ardent defenders of limited regulation for VoIP are nonetheless receptive to applying some legacy social regulations to VoIP.²¹⁵ Even those parties who were generally opposed to most forms of VoIP regulation recognized the potential need for it in areas where market forces could not yield an appropriate solution.²¹⁶ Perhaps most surprising amongst these comments is the recognition of the need for universal service in an IP world.²¹⁷

Just as providing 911 service, access to people with disabilities, universal service, and allowing local law enforcement to perform wiretapping are viewed as necessary for the deployment of VoIP, so too have they been, and will continue to be, essential in the provision traditional telephony. It is in public interest areas such as these that the technology differences between VoIP and traditional telephony are secondary to their functional uses. The VoIP debate therefore may be used as an indicator of what should be considered essential services in any future system of telecommunications

²¹⁴ See Schneider, Goldman & Hartnett, *supra* note 46, at 23 ("If the ILECs face loss of retail customers to cable providers, they might well begin to view CLEC wireline competition as the lesser of two evils. After all, a wholesale customer is better than no customer at all."). A successful example of an upstart firm negotiating leases with a network owner may be seen in the wireless industry. Sprint has generated substantial revenues by leasing access to its PCS network to Virgin Mobile which then uses the network to carry prepaid wireless calls. Roger O. Crockett, *Sprint to the Head of the Pack: By Following Some Unusual Strategies, the Carrier is Blowing Past Competitors*, BUS. WK., Sept. 27, 2004, at 90. Although the wireless industry differs from traditional telephony in that wireless does not require a local loop, this example of competitors negotiating leases that result in the offering of competing and/or innovative products serves as an example of how facilities owners may seek to gain new additional profits from the PSTN.

²¹⁵ NCTA Comments, *supra* note 187, at 3-5.

²¹⁶ For example, one of Microsoft's five "Core Regulatory Principles" states that "IP-enabled services should be regulated only to the extent that they are a substantial replacement for traditionally regulated services and innovators have failed to resolve important social or economic problems." Microsoft Comments, *supra* note 187, at 3.

²¹⁷ See *supra* note 202.

regulation. As such, under a new national regulatory scheme, regulators must continue their role of ensuring the provisioning of these and possibly other social regulations.²¹⁸

VI. CONCLUSION

The history of telephony is a history rife with regulation. For over seventy years, telecommunications has been divided into distinct categories to determine a provider's regulatory obligations. With the introduction of VoIP and the potential for new IP-enhanced services, these traditional boundaries are no longer tenable. In reforming telecommunications regulation to meet the realities of a new marketplace, one must not make the mistake of organizing tomorrow's technologies with yesterday's classifications. Nonetheless, in an effort to draft a forward-looking regulatory structure, it is also imperative that the PSTN, a network which continues to be used by the vast majority of Americans, not be forgotten.²¹⁹

The FTA's failure to establish competitive markets for local service indicates that a change to the status quo is necessary if serious local PSTN competition is to emerge. The arguments that have been used to justify a relaxed regulatory approach to VoIP provide an intriguing challenge to this status quo. Through their application to the PSTN, it is possible to envision a regulatory environment that fosters local competition without sacrificing important social regulations. The time has come to shift our telecommunications discourse away from the applicability of legacy regulations to new services, and toward the feasibility of applying regulations designed for new services to the PSTN.

²¹⁸ This is similar to the approach taken in the proposed VoIP Regulatory Freedom Act of 2004, see *supra* note 181.

²¹⁹ The FCC's most recent study of telephone service notes that there are roughly 183,042,370 traditional telephone lines in the United States. TELEPHONE TRENDS, *supra* note 3, at 7-3. Although this number has been decreasing since 2000, most Americans will continue to be served by the PSTN for years to come.

